



Forest  
Service

Northern  
Region



# Final Environmental Impact Statement

## Chapter 4 and Appendices

# Pilgrim Creek Timber Sale Project

Kootenai National Forest  
Sanders County, Montana

May 2013



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**FINAL ENVIRONMENTAL IMPACT STATEMENT**  
**PILGRIM CREEK TIMBER SALE PROJECT**

**Kootenai National Forest**

**Cabinet Ranger District**

**May 2013**

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**ABSTRACT:** The Final Environmental Impact Statement (FEIS) consists of the DEIS with the addition of this document which includes Chapter 4 – Public Involvement and Response to Comments, and additional appendices. This FEIS is the final documentation for the analysis of five alternatives, including a “No Action” alternative, that were developed for proposed timber harvest, road construction, prescribed fire burning, and an array of associated activities in the Pilgrim, Stevens, and Smeads Creek drainages of the Cabinet Ranger District of the Kootenai National Forest. The alternatives respond to in different ways to issues and have varying effects on the environment identified for this project. The issues identified for this project are described in the Draft EIS, and alternatives were developed to respond to them. All of the action alternatives respond in various degrees to the issues.

**Alternative 3 is the agency’s Preferred Alternative.**

The Pilgrim Creek Timber Sale Project Draft Environmental Impact Statement (DEIS) was made available for public comment on February. Written comments were received from one individual, two organizations, two government agencies and two counties.

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## **I. Introduction**

The Pilgrim Creek Timber Sale Project encompasses an area of approximately 29,987 acres in the Pilgrim Creek, Stevens Creek, and Smeads Creek drainages near the town of Noxon, Montana on the Cabinet Ranger District of the Kootenai National Forest. The project includes such activities as timber harvest, road construction, and prescribed burning.

The Pilgrim Creek Draft Environmental Impact Statement (DEIS) was made available for public comment on February 8, 2013. The Final Environmental Impact Statement (FEIS) consists of the DEIS with the addition of this document which includes Chapter 4 – Public Involvement and Response to Comments, Errata, and additional appendices.

## **II. SUMMARY OF SCOPING AND PUBLIC INVOLVEMENT ACTIVITIES.**

### **PUBLIC INVOLVEMENT**

Public involvement utilized in developing issues and alternatives to the Proposed Action (Alternative 2) and considered in the resource analysis is explained in Chapter 2 of the DEIS.

Below is a brief summary of public participation and scoping for this project.

- In October 2009 a public information meeting was held to provide information regarding areas of interest and potential activities. Eleven people registered and at least that many more elected not to sign in at the meeting. Attendees expressed concerns about insect and disease infestations and wildfire risk, road access, and had questions about the use of prescribed fire for wildlife habitat enhancement.
- A field trip was held on October 17<sup>th</sup> 2009 and was attended by three members of the public. Discussion focused on insect and disease activity and forage availability for big game.
- The project was listed in our Schedule of Proposed Actions (SOPA) beginning in January 2010.
- A detailed scoping letter outlining the proposed action was mailed on February 24, 2010. Recipients included other federal agencies, State and county agencies, local Tribes, and approximately 70 local land owners, watershed council members, and other interested parties. Responses were received from eight individuals, two organizations, one agency, and one county.

- Responses were used to identify issues and develop alternatives to the proposed action. As alternative development progressed, a second scoping period was initiated to solicit comments on openings exceeding 40 acres in size and a proposed amendment to the Forest Plan regarding open road densities in Management Area (MA) 12. Comments were received from three organizations and one county.
- Early in 2012 in response to an array of emerging potential issues, changed conditions, and the expanded scope of the project in response to increasing mountain pine beetle activity in lodgepole pine, the decision was made to prepare an environmental impact statement and a notice of intent was published in the Federal Register on March 23, 2012. A letter was mailed to interested individuals, agencies, tribes and organizations explaining the move. One agency and one county responded during this time period.
- The Notice of Availability of the Draft Environmental Impact Statement (DEIS) was published in the Federal Register and the Daily Interlake on February 8, 2013.

### III. ISSUES

Comments were received from two agencies, two counties, two organizations, and one individual during the comment period on the DEIS.

The following are the issues identified in Chapter 2 of the DEIS.

**ISSUE 1: ROAD CONSTRUCTION** - Concern was expressed that road construction could have a variety of adverse environmental impacts.

**ISSUE 2: OPEN ROAD DENSITY ON BIG GAME SUMMER RANGE** - Concern was expressed that open road densities could reduce habitat effectiveness for big game species and result in a decline in big game populations.

**ISSUE 3: EXPANDING INFESTATION OF MOUNTAIN PINE BEETLES** - Mountain pine beetles have become much more active in the project area since the proposed action was originally developed. This local outbreak coincides with a larger, better known outbreak elsewhere in Montana. Given the existence in the project area of lodgepole pine stands, which are the primary target of mountain pine beetles, and observed increases in beetle attacks and related mortality, there is some concern that the proposed action does not include enough treatment to address the current increasing mortality in the lodgepole pine from mountain pine beetles.

**ISSUE 4: CREATION OF OPENINGS GREATER THAN 40 ACRES IN SIZE** -The proposed action and alternatives 3 and 4 include proposed treatment units that would be over 40 acres in size, either based on the actual size of the proposed unit, or in combination with adjacent,

existing openings. Concern was expressed about possible adverse environmental impacts to wildlife and other resources from creation of larger than 40 acre openings.

#### IV. ADDITIONAL ISSUES

The interdisciplinary team evaluated additional issues brought forth in comments provided on the DEIS. The team considered the extent, duration, and level of public concern associated with each issue. Some issues did not meet the criteria for significance; others did not show enough relative difference to differentiate among alternatives. None of these issues warranted development of a new alternative or modifications to the current alternatives, but may provide insight into how alternatives were developed and how they respond to public concerns.

- **Grizzly bears and implementation of the Access Amendment Standards** Concern was expressed that standards prescribed by the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Recovery Zones (Access Amendment) would not provide adequate protection for bears occurring in the Clark Fork “Bears Outside the Recovery Zone” (BORZ) area.
- **Economics associated with road maintenance and implementation of Best Management Practices (BMPs)** Commenters expressed concern about available funding for maintenance of roads used for sale activities and whether building new roads was prudent given the backlog of maintenance of existing roads that exists.

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## LIST OF RECIPIENTS

The following is a list of agencies, tribes, government officials, organizations, and individuals to whom the FEIS and Record of Decision (ROD) or notice of availability has been sent. This list includes anyone who has requested to receive such information, or otherwise has participated in this project. It also includes those agencies and organizations that are required to receive this FEIS and ROD. An electronic copy of the Pilgrim Creek Timber Sale FEIS and ROD is available on the Kootenai National Forest website at <http://www.fs.usda.gov/projects/kootenai/landmanagement/projects>. Additional copies of this document are available from the Cabinet Ranger District in Trout Creek, Montana.

### **American Indian Tribes**

Confederated Salish and Kootenai Tribes  
Kootenai Tribe of Idaho  
Tribal Chair  
Environmental Department  
Salish and Kootenai Tribal Liaison

### **Local Government and Elected Officials**

Sanders County Commissioners  
Tony Cox  
Carol Brooker  
Glen Magera

Lincoln County Commissioners  
Mineral County Commissioners  
State Representative Pat Ingraham  
State Senator Jennifer Fielder

### **State Agencies**

Montana Department of Environmental  
Quality  
Montana Department of Fish, Wildlife and  
Parks  
Montana Department of Natural Resources  
and Conservation

### **Federal Agencies**

USDA Forest Service  
USDA Office of Civil Rights  
USEPA Region 8, Montana Office  
USEPA, Office of Federal Activities  
USDA National Agriculture Library  
USDA Natural Resources Conservation  
Service  
USDA Animal and Plant Health Inspection  
Service

USDI – Office of Environmental Policy  
USDI Fish and Wildlife Service  
USDOD Army Corps of Engineers  
USDOE Federal Highway Administration  
Department of Homeland Security  
Federal Aviation Administration  
Planning and Review Commission on Historic  
Preservation  
Northwest Power Planning Council

### **Organizations**

Alliance for the Wild Rockies  
The Lands Council  
American Wildlands  
Cabinet Resource Group  
Montana Wilderness Association  
Rock Creek Alliance  
Avista Corp.

### **Individuals**

Doug Ferrell  
Roger Lund  
Cal Ryder  
Paul Nigro  
Joe and Wendy Dossantos  
Tom Humphreys  
Mike Miller  
Dennis Clark  
Matt Bowser  
Randy Carpenter  
Jerry Arsena  
Bill Martin  
Howard Bakke  
Jan Hayes  
Jerry and Sherry Bonds  
Dick Artley  
Liz Sedler

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*Pilgrim Creek Timber Sale Draft Environmental Impact Statement***RESPONSE TO COMMENTS*****Kootenai National Forest – Cabinet Ranger District  
April 2013***

On February 5, 2013, the Draft Environmental Impact Statement was sent to individuals, groups, and agencies. The DEIS was also posted on the Kootenai National Forest internet web site, and the on-line PALS/SOPA (Schedule of Proposed Actions). On February 8, 2013 a Notice of Availability for the Pilgrim Creek Timber Sale Project was published in the Federal Register. Legal ads were published in the Kalispell, MT Daily Interlake February 8, 2013, the paper of record for the Kootenai National Forest. Eight written comments were received and considered in completion of this FEIS. We are providing documentation of consideration of all comments received on the release of the Draft Environmental Impact Statement (DEIS) for the Pilgrim Creek Timber Sale Project. Comments are sometimes summarized here, and the full text of the comments is included in the project file for the Pilgrim Creek Timber Sale project.

**Tribal Involvement**

The concerns of the Kootenai and Salish tribes and the Kootenai Tribe of Idaho were solicited through project scoping and review of the DEIS. In addition, the Confederated Salish and Kootenai Tribe provided a tribal liaison to work with the KNF to review this project and provide tribal input during its development.

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**COMMENT – (Mineral County Board of Commissioners)**

Thank you for the opportunity to examine the extensive DEIS developed for the Pilgrim Creek Timber Sale Project in our neighboring Sanders County. This project is obviously more than just a timber sale; it will result in significant forest health improvements and we are in staunch support of its purpose and objectives. We also concur with your preference for Alternative 3 as delineated in the DEIS for the following reasons:

**RESPONSE** – Supportive of proposed project; no further response warranted.

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**COMMENT (Sanders County Natural Resource Council)**

This communication is in regards to the DEIS of the Pilgrim Creek Timber Sale Project. It is encouraging to see the detailed efforts your district has put forth for this DEIS, especially alternative #3 (your preferred alternative).

In regards to the building of new roads, if that is what it takes to help make our forest healthy again then so be it. Repairing of the existing road system is also a good thing along with refraining from obliterating any. Tax payers paid for the road system and should we ever have a need to fight fires (heaven forbid) they'd still be there.

This is a good start in repairing the damage that neglect of our forest has caused. Thank you for the opportunity to voice our concerns. SNRC can be reached at the above address or via phone at (406) 847-5100. My E-mail is [johnnt@blackfoot.net](mailto:johnnt@blackfoot.net).

**RESPONSE** – Supportive of proposed project; no further response warranted.

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**(The Lands Council and Alliance for the Wild Rockies; Jeff Juel)**

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**COMMENT** - *We are firmly opposed to any alternative that would result in new road construction. There is hardly any feature on forest landscapes that is less sustainable than a road network for which the Forest Service (FS) chronically receives inadequate funding for maintenance.*

**RESPONSE** – Potential impacts from the transportation system, including any construction of roads, are analyzed in the DEIS. The analysis related to soils examines the potential impacts of existing roads and proposed new construction (DEIS, Chapter 3, pages 243-244, 247-252, and 255-259). Road related issues are also presented in the *Scenic Resources* section of the DEIS (Chapter 3, pages 262-276), *Unroaded Areas* (Chapter 3, pages 283-288), *Noxious Weeds* (Chapter 3, pages 297-301), *Hydrology* (Chapter 3, pages 165-167, 177-180, 186-190, 193-194, and 196), and elsewhere in the DEIS.

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**COMMENT** - *Applying the concept of Historic Range of Variability (HRV) for sustaining forest ecosystems, as the DEIS does, may be appropriate as long as the uncertainties pertaining to reference conditions of the project area are addressed, and all important resource conditions are adequately considered within the HRV framework. The DEIS states:*

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*“The purpose of describing reference conditions is to explain how human and natural disturbance have changed forest conditions and succession. This information provides insights to important questions such as natural frequency, intensity and scale of disturbances, abundance and rareness of plant and animal species, and the age-class and composition of trees (Kaufmann et al, 1994). Fire, wind, insects, and disease are important disturbance processes, creating a dynamic mosaic of forest conditions. These natural events can occur in small, localized areas or impose changes over broad landscapes. Species composition, habitat diversity, age class distribution, and stand structure are direct results of disturbances.”*

*(3-11, 12.) The DEIS, unfortunately, represents an imbalanced use of the HRV concept. For example, given the paucity of historical data of timber stands and landscape pattern of the project area, and given that so much data is obsolete, the DEIS’s analysis does cannot adequately support the proposed manipulation of timber stands. It is extremely important to utilize the best data available to make accurate determinations of the reference conditions and to be able to therefore correctly identify departures from the reference conditions (Churchill, 2011; Noss, 2001).*

**RESPONSE** – There is no standard protocol for consideration of Historic Range of Variability (Natural Range of Variability, Range of Variability, etc.) concepts in land management. These concepts are discussed as “reference conditions” in the DEIS, Chapter 3, pages 11-17. The concept is further incorporated into the discussion of Vegetation Response Units (VRU), where the existing condition of each VRU is contrasted with reference conditions (departure from reference conditions) in Chapter 3, pages 18-24. The concepts of reference conditions and how they can facilitate understanding of landscape dynamics are a common thread throughout discussions of all forest resources.

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**COMMENT** - *Given the ecological differences that exist between suitable and unsuitable areas, the accuracy of extrapolation between the two that purportedly supplements the lack of data is questionable.*

*In MA 10, areas would be logged. MA 10 standards include:*

*This MA is unsuitable for timber production.  
Salvage harvest may occur to prevent the spread of insects or disease to adjacent MA's.  
Harvest may occur for wildlife habitat maintenance or enhancement.  
Harvest will not occur on areas of inventoried old-growth timber or where old-growth retention is needed.*

*(Forest Plan at III-40.) The DEIS does not demonstrate consistency with these and all other Forest Plan MA 10 standards.*



**RESPONSE** – All proposed timber harvest in lands designated as MA 10 would be consistent with the Forest Plan (DEIS, Chapter 3, page 46). Very little acreage in unsuitable MAs are proposed for any kind of timber harvest; alternative 2 would include 15 acres in MA 12, and alternative 4 includes 6 acres of MA 10. Treatments associated with these acres are designed to comply with Forest Plan standards for timber harvest in the associated MA designated as unsuitable for timber harvest (DEIS, Chapter 3, page 71). Compliance with this standard is also discussed in the Vegetation analysis in Chapter 3, pages 43-44.

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**COMMENT** - *The project Purpose and Need is designed to a large degree around the assumption of currently unusual (outside HRV) occurrences of insect infestations and other agents of tree mortality, never considering that those effects are rather mild as compared to, alternatively, the potential effects of another natural disturbance—wildland fire, that is being suppressed (far outside HRV). So beetle infestations are considered to be “catastrophic” in a manner that highly distorts the meaning of the term, thereby making justifications of the proposal to create very large logged openings (aka clearcuts or their variants) on the landscape. Thus, forest plan wildlife standards limiting opening sizes are dismissed or entirely ignored. The DEIS also ignores standards relating to maintaining corridors between openings.*

**RESPONSE** – The DEIS does not state that current insect and disease agents are outside of the Historic Range of Variability (DEIS, Chapter 3, pages 26-29). It does however state that many forest stands in the project area are considered outside the range, especially in terms of species composition and stand structure. These in turn tend to create stand conditions more vulnerable to severe outbreaks of damaging agents. These conditions are discussed in detail in the Existing Conditions portion of the vegetation analysis (Chapter 3, page 30).

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**COMMENT** – *Where a thorough landscape assessment (e.g., Churchill, 2011) determines that logging is warranted in addition to prescribed fire, we propose a conservative approach based on the available scientific literature concerning minimum opening sizes to create openings and therefore growing space for trees, forage, etc.*

*The DEIS does not explain why some areas have been suggested for treatment while other areas are not. We believe that achieving desired conditions requires accounting for every acre possible within the planning unit.*

*“Indicators are used to examine how management actions would possibly address the purpose and need, and to aid in analyzing potential environmental effects to vegetation.” (DEIS at 3-11.) But the only metrics are the number of acres logged!*

**RESPONSE** - Areas identified for treatment responded to the Purpose and Need statements or issues. Some areas were necessarily left out of consideration during alternative development

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because access was either not available or prohibitively expensive (i.e. SF Pilgrim) or were in IRAs where logging systems to treat (helicopter) were prohibitively expensive or infeasible (Rx burn only).

Indicators are used to examine how management actions would possibly address the purpose and need, and to aid in analyzing potential environmental effects to vegetation. These indicators and the units of measure for each are:

- **Successional Stages** - Changes in the amount and character of mid-successional forested land realign with desired forest characteristics, as measured by acres of mid-successional areas altered. Changes in successional stages stem from regeneration of these stands to create early successional areas, or intermediate harvests to accelerate development of more mature stand characteristics.
- **Species Composition** - Stand-level changes trending toward long-lived early seral species such as western larch and ponderosa pine as measured by acres thinned or regenerated.
- **Forest Structure** - Stand-level changes in forest structure as reflected in the horizontal and vertical distribution and relative size of stand components as measured by acres thinned or regenerated to meet these specific objectives, expressed in qualitative terms.

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**COMMENT** - *The description of the regeneration proposals for units states that, other than lodgepole pine, "Trees of other species will be harvested that have signs of insect and disease." Along with the fact that the effects of insects and disease on the forest results in important wildlife habitat components (snags, down logs), the DEIS ignores that removal of these trees would potentially delay these areas from reaching old-growth status.*

**RESPONSE** – The proposed regeneration harvests would not take place in any designated old growth. Additionally, areas proposed for timber harvest are not being managed specifically for old growth characteristics. Old growth habitat is analyzed in the DEIS (Chapter 3, pages 47-57). Snags and down woody material are addressed in the DEIS (Chapter 3, Wildlife, pages 58-64, and Soils (Chapter 3, page 254).

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**COMMENT** - *The DEIS cites surveys of areas proposed to be logged due to the aforementioned "catastrophe" that were completed three or four years ago, which begs the question of what current surveys would show as far as these areas matching the purpose and need for such intensive logging and new road construction.*

**RESPONSE** – Information on presence, intensity and extent of forest insect and diseases in the project area comes from many sources. In addition to structured, stand level surveys referred to

by the commenter, other field reviews have taken place. At the larger scale, team specialist utilized Region 1 annual aerial surveys for insect and disease observations. During the course of all field visits to the project area and specific forested stands, on-going observations have taken place. Additional field visits will continue to monitor the intensity and presence of insect and disease agents.

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**COMMENT** - *The FS apparently believes that the effects of insects and tree diseases are not catastrophic enough, so large logged opening are proposed to be more in line with HRV. In the meantime, other features of the landscape, such as human-induced detrimental soil condition, noxious weed occurrence, wildlife disturbance of noise level of motorized devices, would be pushed farther away from HRV than they already are, without adequate understanding of how this affects ecological sustainability.*

**RESPONSE** – The reference and applicability to Pilgrim Creek regarding “*not catastrophic enough*” is unclear. “*Human induced detrimental impacts*” implies significant adverse impacts without benefit of site-specific analysis of those potential impacts. Such analyses are documented in the DEIS, in regard to soils (DEIS, Chapter 3, pages 232-261), noxious weeds (pages 303-307), and wildlife (pages 47-134). This provides the basis for adequate understanding of potential impacts to ecological sustainability.

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**COMMENT** - *There is nothing in the DEIS that discloses or displays the **reference conditions for the pattern** of varying forest conditions across the landscape. Because of the dynamics associated with disturbance agents such as fire and other agents of tree mortality such as insects and disease, the landscape pattern in so many ways represents ecological resilience. Conditions in any given stand—even current conditions—tend to fall within the wide range of variability found in pre-development times. That is the nature of forests of the mixed fire regime. (Churchill, 2011) We emphasize: **any departure is found in the pattern—not individual stands**. The DEIS’s emphasis on the latter misses the forest for the trees, and we believe it was misused to justify logging.*

**RESPONSE** – There is no standard protocol for consideration of Historic Range of Variability (Natural Range of Variability, Range of Variability, etc.) concepts in land management. These concepts are discussed as “reference conditions” in the DEIS, Chapter 3, pages 11-17. The concept is further incorporated into the discussion of Vegetation Response Units (VRU), where the existing condition of each VRU is contrasted with reference conditions (departure from reference conditions) in Chapter 3, pages 18-24. The concepts of reference conditions and how they can facilitate understanding of landscape dynamics are a common thread throughout discussions of all forest resources. Site specific stand management in the Pilgrim proposal is based on site or stand specific objectives.

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**COMMENT** - “Large valley bottoms were often composed of fairly **open grown, mature western larch** with younger lodgepole pine, Douglas-fir and grand fir in the understory.” (DEIS at 3-20, emphasis added.) In terms of reference conditions, open-grown mature western larch occurring in limited locations where native peoples frequently utilized fire. Otherwise, the discussion of dominance of white pine and larch in pre-settlement times would be expected to closely resemble the nearby Priest River Basin as described in USGS, 1899:

*The Priest River Basin is essentially a forest-covered region. **There are but few tracts within its boundaries that do not now, or did not a few years ago, support a dense, magnificent forest.***

*...To the white pine zone belong the areas supporting a nearly pure growth of lodgepole pine. They are found throughout the reserve on the lower flats and terraces of the stream valleys. In some localities they are of considerable extent, the largest area being just below the south end of Lower Priest Lake and stretching thence nearly to the junction of the East Fork with the main Priest River. **This character of forest is usually very dense, the areas containing from 800 to 2,000 or more trees to the acre. There is often a considerable amount of litter, consisting wholly of broken-down young growth.** Where the forest has reached an age of 90 years and upwards there has accumulated a depth of humus ranging from 3 to 6 inches. The undergrowth is low and scattered, composed mainly of *Pachystima*, service berry, *Holodiscus*, and various species of alders and willows.*

*...The second phase of the (yellow pine) forest occurs where the red fir replaces the yellow pine. This takes place whenever there exists a deeper, less rocky soil, heavier precipitation, and less rapid drainage. The grassy slopes characteristic of the former phase of the zone are mostly lacking, and are replaced by a heavier and more extended growth of the shrubs previously enumerated. **The forest growth is dense, in some localities ranging from 800 to 1,500 trees to the acre, but where such density exists the diameters of the individual tree are small. The litter is generally abundant, consisting of fallen trees,** and the humus attains a depth of 3 to 5 inches.*

*...Large areas where the forest is untouched have an extremely dense growth,...*

*(USGS 1899, emphases added.)*

**RESPONSE**—Qualitative observations recorded in 1899, in the white pine zone of Northern Idaho, capture an historical “snap shot” of conditions on an extremely complex environmental gradient, in a unique, white pine dominated ecosystem which is uncharacteristic of the Pilgrim project area. Spatial and temporal environmental gradients combined with the periodicity of anomalous, large scale disturbances restrict the utility of such observations. For example, the statement regarding “age of 90 years” is telling, as it clearly demonstrates that these even-aged, stand replacement and mixed severity ecosystems had been regenerated by disturbance, most

assuredly fire. This would imply that the forested areas observed were cohorts of a stand replacement disturbance (fire) approximately 90-100 years prior to these observations. This, in turn, implies stand conditions in the “stem exclusion phase” (Oliver and Larson, Forest Stand Dynamics, 1990) commonly associated with the conditions described above (closed, dense canopy and depauperate understory). Such a snap shot of conditions must be recognized as such, and it is critical to place those observations in the context of a dynamic landscape.

The core of NEPA is focus on site-specific analyses. The use of VRU classifications and potential natural vegetation descriptions (habitat types) allows consideration of such dynamics, and this analysis is documented in the Pilgrim Creek Timber Sale DEIS (Chapter 3, Vegetation, pages 32-35). Though of interest, and relevant to the decisions to be made, the utility of these historical observations is of limited value in the analysis of potential environmental impacts related to the proposed actions.

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**COMMENT** - *The DEIS states under Insects and Diseases:*

*A consideration of **forest health emphasizes prevention** as opposed to suppression as a management strategy for insects, pathogens and natural disturbances that are considered detrimental to resource production. This emphasis is made **with recognition** of their beneficial role with regard to resources and ecosystem functions.*

*(P. 3-26, emphasis added) The DEIS does not disclose how the beneficial roles of insects, pathogens, and natural disturbances are “recognized” at the same time “forest health emphasizes prevention” of these very same natural disturbances.*

**RESPONSE** – Managing specific forested stands for resilience does not imply a lack of recognition of the role insects and diseases play in forested ecosystems. Treatments for proposed units in the Pilgrim Creek Timber Sale are designed to address the purpose and need for treatment, as described in the DEIS (Chapter 1).

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**COMMENT** - *The DEIS mentions “predicted climate change” but does not disclose how the resource management regime being imposed is consistent with the changes likely under any climate change scenarios.*

*Under “Carbon Flux” the DEIS basically poses that its management regime is neutral in terms of carbon storage. This is in direct contraction to much scientific discussion on the topic, which indicates timber management only reduces long-term carbon stocks. In short, the DEIS ignores the controversy and genuine scientific dialogue.*

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**RESPONSE** – Carbon flux is discussed in the context of the existing condition in the DEIS, Chapter 3, pages 30-31. Additionally, carbon flux is discussed relative to the action alternatives (Chapter 3, page 35).

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**COMMENT** - *The DEIS does not disclose how accurate R1 FSVEG Size Classes are for translating into successional stages (Table 3-3.), especially suspect due to the age of much of your timber stand data. We suspect that other resource analyses, such as for wildlife, are further extrapolations upon this one extrapolation, making their reliability and validity quite doubtful. Use of the term “immature” to describe stands initiated over 100 years ago (3-17) doesn’t help.*

**RESPONSE** – Classification of successional stages is only an estimate. These estimates are rather simplified for the project area, as the majority of the stands (90% +) in the project area are cohorts of the 1889 and 1910 fires, resulting in a landscape dominated by 113 year old stands, which by most definition represents mid-successional status (Oliver and Larson, 1990). Intuitive classification, based on predominate size classes, plurality of stocking for early successional conifer species, 1947 aerial photography images, adjacency similarities, and professional interpretation result in a reliable estimation of successional stages for the forest stands in the project area (DEIS, Chapter 3, pages 10-11, and 17). The role of the 1889 and 1910 fires in shaping the current distribution of successional stages across the project area are further discussed in the context of specific VRU designations (Chapter 3, pages 19-24). The reference to “immature” clearly states the immature status relative to “saw timber”, not the age class status of the stands in question.

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**COMMENT** - *“Desired stand conditions have basis on the KNF Forest Plan management area direction, and site-specific objectives recommended by the Interdisciplinary Team.” (DEIS at 3-11.) How did the DEIS address the issue of where plan direction and IDT objectives were inconsistent?*

**RESPONSE** – All proposed activities are consistent with Forest Plan desired conditions. The Forest Plan describes desired conditions in very general terms, laying the stage for refinement at the project planning scale.

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**COMMENT** - *In its overly narrow analyses of cumulative effects of past management activities, the DEIS does not provide adequate summaries of the purpose and need statements from past NEPA documents, the level of achievement of their desired conditions and/or project goals, results of required monitoring, nor the consistency of past project with resource conditions as expressed in the Pilgrim Creek desired condition and purpose and need statements. So, for*

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*example, the metrics in Table 2-16 are not expressed in terms of accomplishments by past actions, which is inconsistent with providing adequate cumulative effects analyses.*

*The DEIS states, “The effects of (Past Actions) and events were considered in the analysis of the existing conditions of the resources in the project area, which are described in (Chapter 3).” Under many discussions of resource analyses in the DEIS, however, it does not state how the effects of past actions were “considered” in important ways.*

**RESPONSE** – The cumulative effects analysis for the Pilgrim Creek Timber Sale is in full compliance with law, regulation and policy (40 CFR 1508.7 and .8). Actions associated with past activities in the project area are summarized in the “*Summary of Past, Ongoing and Reasonably Foreseeable Actions*” discussion, in Chapter 3, pages 3-8. The role of these actions in shaping and defining the existing condition in the project area is discussed.

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**COMMENT** - *The shortcomings of Forest Service management of the old-growth habitat issue in the Northern Region national forests have been noted since the creation of the original Forest Plans, and even prior. Yanishevsky, 1994 provided a critique of the Northern Region of the U.S. Forest Service’s management of this resource, the Forest Plans and their implementation. (“Old-Growth Overview: Fragmented Management of Fragmented Habitat”)*

*The DEIS’s Desired Conditions includes:*

*Vegetative conditions provide for a full range of ecosystem diversity, including a full range of habitats with varying ages and structures necessary to maintain self-sustaining populations of native wildlife species; including habitats for species associated with late-successional structures, climax community types, and old growth forests.*

*And yet, the only project response to this DC is to not log in designated old growth. This ignores the fact that old growth conditions are far outside the HRV and ignores the forest plan requirements that areas that are capable of achieving old growth conditions must be identified, so that project such as this one do not further delay achievement of old growth conditions to support well-distributed populations of wildlife.*

*Because of the management history of the KNF, populations of native wildlife have almost certainly experienced decline. Given that the FS seems is carrying out a management regime that features repetitive logging to maintain fuel conditions at some level and maintain “resilience”, there needs to be long-term plan that designates enough old-growth habitat to support viable populations of all the native wildlife. Landscape-level fuel “treatments” involve industrial-scale manipulations that inevitably suppress wildlife habitat structures such as snags, down logs, and other characteristics of old-growth forests. In order to demonstrate that the project is consistent with long-range goals for forest age class and species composition—which would assist in maintaining and recovering these species populations—we urge the FS to adopt strategies as*



*have other units of the national forest system. For example, Boula, 1999 describes a strategy by the Umatilla National Forest, which became concerned about the increasing rarity, fragmentation and degradation of late/old forest habitats across the Blue Mountains. They proposed a new approach to old forest conservation and management, and a strategy was proposed for a project area. Likewise, Zack et al. 1997 was prepared by an Idaho Panhandle National Forests planning team to address a need to develop sub-basin specific strategies for addressing issues related to mature/old forests and old forest legacies. Such planning for the Pilgrim Creek Project would also respond to Kootenai National Forest's Dueker and Sullivan (2001), who recognize that "historical conditions probably provided a higher level of old forest habitat through time than what is provided for by Forest Plan direction (a mean of 27.7% as opposed to 10%)."*

*Best available science, as reflected in the Forest Plan, is clear that blocks of old-growth timber less than 50 acres<sup>1</sup> in size do not "provide habitat for those wildlife species dependent on old-growth timber for their needs" (Forest Plan old-growth standard).*

*The DEIS is not consistent with Forest Plan old growth standards or monitoring provisions required to insure wildlife viability. Since the Forest Plan does not explain the implications for wildlife viability when planning sub-units are below 10% old growth, or where so many old-growth blocks are below the size the Forest Plan states is effective habitat for associated wildlife, the DEIS must fill in the gaps. We don't see how the DEIS does that.*

**RESPONSE** - Within the Pilgrim project area there are a total of 3,091 acres designated for old growth management. These acres are in 26 blocks ranging from 26 to 660 acres in size. Of these designated old growth blocks, 50% are greater than 50 acres in size.

Stands smaller than 50 acres in size were designated to protect additional attributes unique to old growth where they exist in the subunit. They were designated based on recommendations in Morrison et al (1992:85), where they state "it is vital to recognize that in heavily fragmented landscapes, the last remaining patches of older or forested vegetation may play an important role. The patches may act as stepping stones for dispersal of many species associated with the specific environmental conditions throughout the landscape. Removal of such patches because they fail to meet criteria for size and provision of interior conditions may result in a network of dispersal for wildlife being severed in the landscape". These stands are largely surrounded by multi-aged stands, which provide corridor links to larger blocks of old growth. Old growth is analyzed in detail in the DEIS (Chapter 3, pages 47-64).

**COMMENT** - *The DEIS does not present data on MIS population abundance or nesting success in the project area. Since there is no scientific basis for assuming that 10% old growth is enough for*

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<sup>1</sup> Forestwide, the FS includes 503 of such <50 acre blocks (out of 1460 total) in its inventory of designated effective old-growth habitat.

*species viability, and since there is no scientific basis to support the KNF's use of its MIS pileated woodpecker as adequately "indicating" for other species including the Sensitive wolverine, black-backed woodpecker, fisher, flammulated owl, northern goshawk, etc., the proof would be in the monitoring. And no available data is cited which demonstrates the FS has completed monitoring that would validate the assumption inherent in the Forest Plan's old-growth habitat standards—that they are adequate for assuring old-growth species' viability.*

*The Forest Plan at A 12-1 states:*

*About 280 different species of wildlife occupy the Kootenai National Forest. ...Species were placed in one of ten groups, depending on their habitat preferences for feeding and reproduction. ...For each of these groups a particular species was identified as an indicator species, to act as a barometer of change in that particular habitat."*

*So—for the wolverine, fisher, black-backed woodpecker, western toad, Canada lynx, flammulated owl, northern goshawk, Townsend's big-eared bat, fringed myotis, fringed myotis, and long-legged myotis—does the pileated woodpecker analysis represent the viability analysis for each of those species?*

**RESPONSE** – The Kootenai National Forest has completed a Conservation Strategy for the species in question (Johnson 2004), which includes a Forest-wide analysis of species viability. This document documented in the DEIS and is available in the project file.

Regarding predicted impacts to the species referred to, the Canada lynx determination is "*may affect but not likely to adversely affect*" and the United States Fish and Wildlife Service has concurred (DEIS, Chapter 3, pages 120-130).

The three myotis species referred to are not listed as sensitive species on the Kootenai National Forest.

The DEIS documents analyses of the wolverine (Chapter 3, page 5), fisher (pages 95-98), black backed woodpecker (pages 89-93), western toad (pages 106-108), flammulated owl (page 5), and Townsend's big-eared bat (pages 103-105), are all analyzed in the DEIS for potential impacts related to the proposed actions, and this analysis includes viability determinations.

The Pilgrim Creek Timber Sale DEIS is a site-specific, project-level analysis of potential environmental impacts related to the proposed actions. Revisiting the Kootenai National Forest Land and Resource Management Plan is outside the scope of this impending decision.

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**COMMENT** - *The DEIS states that field surveys of large acreages that had previously been classified as old growth resulted in a their being "removed from old growth status" without an adequate explanation as to why there were such inaccuracies of previous old growth inventories. The DEIS does not indicate if any of these "removed" areas are now being proposed for logging.*

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*The fact that the previous old-growth inventory for the project area was 38% inaccurate also calls into question the forestwide old-growth inventory—itsself based upon similar sources of data.*

*The analysis for the old-growth and cavity nesting MIS pileated woodpecker boils down, essentially, to “we’re not affecting them because we’re not logging designated old growth.” We don’t expect that woodpeckers will read the EIS to determine where all the newly designated old growth is (which is the latest version of the FS’s viability guarantee). The DEIS is inconsistent with the best scientific information, including some of the sources the DEIS cites. For example, there is nothing in the DEIS pertaining to nest tree characteristics.*

*Younger stands with remnant medium and large sized trees would likely not meet Green et al. criteria and would not qualify as old growth, however, given their historical abundance they were undoubtedly an integral part of many species’ habitat requirements, are likely therefore of crucial importance to maintaining wildlife populations, and yet have significantly declined in abundance largely due to logging. This is a fact that is not accounted for, or acknowledged, by the FS’s reliance on the maintaining of a small portion of old growth as a proxy for old-growth species viability and ultimately the maintenance of biodiversity that is a statutory mandate. The FS strategy for maintaining old-growth dependent species viability, or the viability of other species dependent on medium and large trees outside of or in addition to old growth, is invalid.*

*Due to the lack of scientific rigor in your definition of “replacement old growth”, nothing about its ever-changing location provides confidence that the latest designations provides a sufficient way to insure viability of species that depend largely upon old growth (such as the dozens of species the forest plan recognizes as finding optimum habitat in old growth) or cavity habitat species (birds, mammals, amphibians, etc. – DEIS at 3-59).*

*The proposed logging strategy does not account for medium and large tree requirements outside of old growth by forest species that are currently or were historically found in the area. There are some important implications of findings from the ICEBMP regarding large trees that the DEIS fails to take into account. Hessburg, et al. 2007 state:*

*There are at least two important ramifications: First, it has been broadly assumed that large trees are principally associated with old forests, where they contribute important living and dead structure. In some ERUs, old forest abundance was historically quite minimal (Table 3), but medium and large trees were distributed in other forest structures as a remnant after stand-replacing fires; in some cases, large trees comprised as much as 24% of the crown cover of forest structures, contributing important living and dead structure. Hence, some non-old forest structures of historical forest landscapes contributed a measure of late successional functionality and connectivity with old forest. Second, where old forest area and area with remnant large trees has been depleted, the present and future supply of medium and large dead trees as snags and down logs is substantially diminished. This is especially true of snags and down logs of early seral*

*species. We propose that terrestrial and aquatic species and processes requiring large dead tree structure may be adversely influenced by this reduction unless the shortfall is remedied through recruitment.*

*The DEIS does not explain why areas of designated old growth degraded by snag loss due to firewood cutting or wind vulnerability, or degraded in other ways related to the fragmentation and edge effects described in the DEIS and scientific research, still qualify as “effective old growth.” Qualitatively speaking, the DEIS admits that the effectiveness of the “effective” old growth is not as good as unaffected areas. Projected forestwide, this indicates the “effective” old-growth inventory is most likely an overestimate, statistically speaking. This is not considered in any viability analysis.*

*“While changes in vegetation and wildlife use may occur on the acres influenced by edge, those acres remain functional old growth for some species.” (3-54). We know that is true for brown-headed cowbirds, but with this vague assertion the DEIS is unable to make any statement regarding those dozens of species the forest plan recognizes as finding optimum habitat in old growth.*

**RESPONSE** – Old growth validation followed the Kootenai’s protocol during project planning. Six stands (502 acres total) previously designated during Forest Plan development as old growth were dropped from replacement old growth designation during the validation process, and are included in potential harvest units. Stand exams found four of the stands not suitable for replacement old growth. Another stand had been commercially thinned and was no longer suitable. The sixth stand was less than 100 years old.

*Pileated woodpeckers usually nest in dead trees more than 25 inches diameter at breast height and feed upon insects (usually carpenter ants) found in dead wood (Bull et al. 1990). Due to this requirement for large diameter dead trees for nesting, pileated woodpecker was designated the indicator species for old growth habitat by the Kootenai NF. However, as described above, medium and large trees were distributed in other forest structures as a remnant after stand-replacing fires; in some cases, large trees comprised as much as 24% of the crown cover of forest structures, contributing important living and dead structure. Hence, some non-old forest structures of historical forest landscapes contributed a measure of late successional functionality and connectivity with old forest (Hessburg et al. 2007).*

Therefore, it is not unlikely that pileated woodpeckers would be able to find foraging habitat outside of the designated old growth in the project area, particularly in the 14,000 acres of Inventoried Roadless Areas in the project area.

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**COMMENT** - *“There are no site specific snag surveys in the Pilgrim PSU.” (3-58.) The Smeads-Rice ROD required snag monitoring. The Red Devil DN required snag monitoring. Were there really no*

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*snag monitoring requirements for the project area in any past NEPA document? Did the FS carry out any promised surveys in the project area?*

*If new science has been “incorporated” into management direction for snags (3-58) but the FS only needs to “consider” it, then how can the FS claim it is **using** the best scientific information available?*

*Has the FS completed any research or monitoring that validates the numbers used by the DEIS in PPI analyses for any wildlife?*

**RESPONSE** – Within the project area boundary, snags were monitored as part of the Rice Paddy, Stevens Blacktail, and Southwest Pilgrim timber sales. Pre-harvest surveys were conducted in two units in the Red Devil Sale. No post-harvest snag surveys have been conducted to date in the Smeads-Rice or Red Devil Sales.

Management direction is established by the Forest Plan and can only be changed when the Forest Plan is revised.

It is not appropriate to validate potential population index (PPI) values. These values are derived from relevant, peer-reviewed literature to determine the habitat requirements of the species in question, then applying published information to the project area. The calculated PPI is a representation of the potential population that could inhabit the project area, based on published habitat requirements. It is not a population estimate.

A comprehensive analysis of snag habitat was conducted and is documented in the DEIS (Chapter 3, pages 58-64). Kootenai National Forest Plan cavity habitat standards are met; all proposed units would meet the 40% minimum snag habitat standard (page 64).

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**COMMENT** - *According to the KNF’s Johnson, 2003: “Historically the KNF was probably able to support between 335 and 1384 breeding pairs of pileated woodpecker.” As noted above, the Forest Plan establishes the minimum viable population of the pileated at 40% of its potential population in the KNF, in accordance with standard scientific methodology for insuring viability. Thus, the minimum viable population for the pileated woodpecker in the KNF is **554 breeding pairs** (40% of 1384).*

*On the other hand, the DEIS states that the modeled minimum PPI for the pileated woodpecker is 425 nesting or breeding pairs. (3-75.) Ignoring for a moment these inconsistent KNF statements, how does the documentation of only 204 pileateds from 1994-2002 (3-76) inform FS analyses of population viability?*

*The DEIS states at 3-76:*

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*“Replacement old growth habitat currently provides less suitable stand conditions for territory occupation. Over the next several decades, in the absence of catastrophic fires or windstorms, these stands will develop better habitat features for pileated woodpeckers such as larger trees, larger snags, and more down logs. Also, higher levels of decadence will develop producing better substrate for food resources such as carpenter ants and their larvae, one of the primary prey items for pileated woodpeckers in the Northern Rockies (McClelland & McClelland 1999, McClelland et al. 1977) and in the Pacific and Inland Northwest (Bull et al. 1992a; Bull 1987, 1975; and Bull et al. 1980).”*

**RESPONSE** - According to the KNF’s Johnson, 2003: *“Historically the KNF was probably able to support between 335 and 1384 breeding pairs of pileated woodpecker.”* As noted above, the Forest Plan establishes the minimum viable population of the pileated at 40% of its potential population in the KNF, in accordance with standard scientific methodology for insuring viability. Thus, the minimum viable population for the pileated woodpecker in the KNF is 134 - 554 breeding pairs (40% of 335-1384).

As described in the pileated woodpecker analysis point count surveys are not robust enough to provide a population estimate. The objective of the surveys is to provide a trend over time of how the population is doing. The scientists behind the Northern Region Landbird Monitoring Program say that 8-10 years of data is required to identify a real trend. They also recommend when looking for a trend to look at multiple forests or even the region for a more accurate representation of the status of a species (Young 2003).

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**COMMENT** - *Given that “replacement” old growth need not meet any objective criteria and thus may be re-located based on largely arbitrary whims in the future, and understanding that a major goal of this project is to “prevent” the effects of the natural disturbances stated in the above quote, how are the project activities designed to meet timber objectives “recognizing” the benefits of the natural disturbances to be prevented?*

*Canopy layers, snags, and down logs are important structure for old-growth associated wildlife. Such important structure within the forest areas slated for logging would be substantially lost with the planned activities, delaying the time these areas could reach effective old-growth status.*

*The FS’s own studies disclose that mixed severity fires are key to the development of old growth in many types (USDA Forest Service, 1998-1999). Thus, the development of mature forests to old growth is also being retarded by logging and fire suppression. The issue of old-growth mixed severity fire regime forest—which often contains a significant component of western larch—is being ignored. USDA Forest Service (1998-1999) identifies Western larch as a “forest type at risk” with “36% loss” within the Columbia River Basin. Causes listed are “fire exclusion and past harvest.” Logically then, the value for old-growth wildlife species is enhanced by wildland fire, but the FS continues to suppress fire via its management*

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**RESPONSE** - Replacement old growth is lacking one or more of the characteristics of old growth as defined by Green et al. 1992, corrected 2005. This project does not treat any designated old growth, except for those stands where it is proposed to reintroduce mixed-severity fire, through use of prescribed fire.

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**COMMENT** - *Since the fuel reduction regime represented by this project was not a planning scenario dealt with in sufficient detail (if at all) during Forest Plan development, both the project-level and programmatic ecological and economic costs and impacts go unexplained and undisclosed. The FS has not disclosed just how much of the KNF is considered to be likewise “out of whack” in alleged “forest health” terms.*

*The proposed actions are a part of a wider, continuing fire suppression strategy, without consideration of sensible wildland fire use—elevating the odds for the type of extreme fire events that would be most destructive to the ecosystem and to human values.*

**RESPONSE** – An examination of “forest health” issues at the Forest level would be outside of the scope of this project and irrelevant to the decision to be made. The Pilgrim Creek DEIS is a site-specific proposal and analysis of potential environmental impacts.

The Pilgrim Creek Timber Sale project includes nearly 6000 acres of natural fuels burning not associated with commercial timber harvest. This is clearly a comprehensive management approach to the “fuel reduction regime”, and is addressed in detail in the DEIS. It is inaccurate to state that ecologic and economic costs and impacts go unexplained and undisclosed.

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**COMMENT** - *“Historic timber harvest typically focused on regeneration of mature and overmature stands that likely provided suitable pileated woodpecker habitat.” The DEIS fails to disclose a reference condition or HRV for pileated woodpecker PPI prior to past management actions, rendering the cumulative effects analysis hollow. This same enigma afflicts cumulative effects analyses in the DEIS for Sensitive species such as the fisher. So such statements as below have little meaning:*

*Past activities have reduced the amount of available denning habitat, but provided for habitat diversity in the short and long term. Cumulatively, this past activity has resulted in 8,285 acres of potential fisher habitat.*

*(DEIS at 3-97) The DEIS fails to disclose how past actions have “provided for habitat diversity” specifically for fisher.*

**RESPONSE** – Pileated woodpecker analysis is documented in the DEIS (Chapter 3, pages 74-78). Reference conditions are inherent in the Existing Condition discussion.

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**COMMENT** - *The DEIS does not state how the home range (including nesting and post-fledging territories) of the nesting goshawks would be managed consistent with the numbers recommended by Reynolds et al., 1992. This should be addressed for both project area territories.*

*How does the current data on 36 nest sites on the KNF (five sites no longer in use) inform the FS as to the **quality** of the 752,296 acres of goshawk habitat on the KNF (Johnson, 2004 – DEIS at 3-79)?*

*The IPNF's Fern Hardy HFRA Project EA states on 3-194, "Region 1 has defined viability for the goshawk as one pair for every 10,000 acres (Warren 1990)." Logically, the KNF being 2.2 million acres/10,000 acres per goshawk pair = 220 pairs needed for viability on the KNF.*

*Just as with the pileated woodpecker, the DEIS does not disclose how any specific project activity affects goshawks or their habitats.*

*The DEIS does not cite the results of monitoring on the KNF that would help settle the conflicting findings about whether or not logging in goshawk nest stands affects occupancy or nesting success. It seems logical that this would be a key monitoring question on the KNF.*

**RESPONSE** - Sampson (2006) and Brewer et al. (2009) both break goshawk habitat into 3 components nest area, post-fledging area, and foraging area in part because the PFA may represent the defended portion of the home range (Reynolds 1992). Northern goshawk home ranges reported by different authors vary depending on age and sex of the bird, the habitat, and the methodology used in collecting and analyzing the data (Kennedy 2003).

Based on Bush and Lundberg (2008) the KNF includes 63,694 acres of PFA habitat (3.6% of the forest). That is enough habitat for 107 – 215 goshawk pairs.

Timber harvest is not proposed in designated old growth under any of the action alternatives. There will be no direct impacts to designated old growth habitat. Indirect impacts will be the same as those described for the No-Action alternative (see above). There will be no road construction adjacent to or through designated old growth areas.

Based on the expected impacts to old growth acres (see Table 3-11 in the old growth section) the PPI is not expected to change.

Project activities (e.g. falling and yarding) are likely to cause PWPs to, at least temporarily, move away from the disturbed areas. (DEIS 3-77)



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**COMMENT** - *The DEIS does not provide any estimates, based on past experience, on how many of the 530 acres of designated old growth proposed for prescribed burning would be expected to lose old growth character due to the not always precise nature of fire application.*

**RESPONSE** – The DEIS page 3-55 speaks directly to this question.

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**COMMENT** - *The DEIS discloses that “have the potential to disturb or reduce day roosting habitat (trees and snags with cavities or thick bark)” of the Townsend’s big-eared bat. The DEIS provides no discussion as to the quality and quantity of habitat needed to maintain viable populations, nor does it provide quantitative discussion of impacts on Townsend’s big-eared bat habitat or viability. The same criticism is valid for the DEIS’s analysis of cumulative effects on the western toad.*

**RESPONSE** – The Townsend’s Big Eared Bat is analyzed in detail in the DEIS (Chapter 3, pages 103-105). This section includes description of the existing condition/affected environment in the context of this species. In addition, the western toad is also analyzed for potential cumulative impacts on page 109. Both analyses disclose no discernible direct, indirect, or cumulative impacts to either species.

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**COMMENT** - *The DEIS does not state the best scientific information it is relying upon to declare that flammulated owls or wolverines are not suspected to occur in the project area.*

**RESPONSE** - Table 3-20 on page 3-85 states that there is no wolverine denning habitat in the project area and that there is no flammulated owl habitat in the project area.

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**COMMENT** - *The DEIS is scientifically deficient to claim that project effects will not affect habitat for black-backed woodpeckers. Given that the FS has never disclosed the forestwide cumulative effects of fire suppression and insect and disease prevention on viability of species like black-backed woodpeckers, the DEIS’s lack of analysis of the direct and indirect effects of those actions and policies in renders it out of compliance with NEPA. The DEIS does not disclose a reference condition or HRV for black-backed woodpecker PPI prior to past management actions.*

**RESPONSE** – In 2012, wildlife burned 49.1 acres on NF land (41 separate fires) acres on the Kootenai National Forest and 1.4 million acres in Region 1 (USFS-R1 2013), as evidence of continual renewal of black back woodpecker habitat on the Forest. See the vegetation section of the Pilgrim Creek EIS for a thorough discussion of the extent of the mountain pine beetle situation in the project area. State-wide in 2012 more than 550,000 acres were impacted by mountain pine beetles (MTDNRC 2013).

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**COMMENT** - *The EIS must include an alternative that meets MA 12 ORD standards. If a project-level analysis is not the time and place for meeting big game standards, then such commitments made in the forest plan would be meaningless.*

**RESPONSE**- Alternative 5 was designed to meet Forest Plan Standards. It does not increase ORDs in the area outside of the Stevens Ridge Amendment Area and is therefore consistent with Forest Plan direction.

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**COMMENT** - *The DEIS indicates that the FS has completed amending the forest plan in regards to unsuitable lands in MA 18 without providing any analysis in the DEIS.*

**RESPONSE** – The analysis for the Management Area validation is included in the project file.

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**COMMENT** - *The DEIS fails to address many applicable standards particular to management areas found in the project area. For example the DEIS fails to demonstrate consistency with MA 13 facilities standards and others, or include alternatives consistent with them.*

**RESPONSE** – Applicable standards for Management Areas in the project area are presented and discussed in Chapter 1, pages 14-18, in the DEIS.

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**COMMENT** - *The DEIS includes a Need to improve forage production and quality, but the only metric used to describe current forage is cover to forage ratios, nothing about current overall quality and abundance consistent with forest plan direction for big game. The elk forage issue seems to be skewed simply to support intensive logging.*

**RESPONSE** - DEIS 1-1 “Big game forage in the project area is primarily shrubs, along with grasses and forbs. Natural disturbance (primarily wildfire) has been relatively uncommon since the 1910 fire and forage quality and availability has declined as forest canopies close. Cover to forage ratios are currently skewed towards cover and there is a need to improve both the quality and quantity of available big game forage. Cover to forage ratios on big game winter range are currently 73/27%, and on summer range it is 79/21%. The desired condition would include early successional habitats that provide a variety of abundant forage plants. Prescribed burning treatments would focus on expanding the incidence of big huckleberry, red stem ceanothus, rocky mountain maple, serviceberry, and willow in the appropriate habitat, and cover to forage ratios of 60/40 on winter and summer range as recommended by the Kootenai Forest Plan.”



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The DEIS 1-2, states, *“Approximately 6,950 acres have been identified as an approximate perimeter for prescribed burning to enhance forage quality and quantity for big game species, notably elk, deer, and bears. Generally, prescribed burn areas are on southerly aspects that historically provided important forage which is declining due to conifer encroachment. Areas where ignition would occur total approximately 4,564 acres, though fire would be permitted to creep outside of these ignition areas towards the perimeter. The intent is to minimize the amount of ground disturbance required for containment lines.”*

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**COMMENT** - *The Forest Plan requires identification of the best scientific information for TES species. The DEIS fails to explicitly identify the scientific documents it relies upon for all TES species.*

**RESPONSE** - A separate biological assessment was prepared and submitted to the US Fish and Wildlife Service after release of the DEIS. The determination of the BA was that the project *may affect but is not likely to adversely affect* the Canada lynx and that there would be no effect to designated critical habitat. The USFWS concurred with this determination.

Wildlife BA Page 21:

The proposed action **may affect, but is not likely to adversely affect** the lynx. This determination is based on: 1) 677 acres {4%} of LAU converted to the early stand initiation stage, 2) 560 acres (3%) of LAU will receive regeneration harvest, (3) no pre-commercial thinning included in project, (4) 493 acres of harvest in stands that cover surveys demonstrate do not meet standards for lynx. Additionally, lynx presence has not been confirmed on the Cabinet Ranger District since 1998. Habitat manipulation that has the potential to increase snowshoe hare foraging habitat could increase local hare populations that may benefit any transient lynx that could happen through. Snow conditions will likely continue to limit habitat quality for lynx in this area. The proposed federal action will not affect designated Canada lynx critical habitat.

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**COMMENT** - *The DEIS indicates that project activities would affect suitable habitat for Canada lynx, so it is not logical that the project would have “no effect.”*

**RESPONSE** - A separate biological assessment was prepared and submitted to the US Fish and Wildlife Service after release of the DEIS. The determination of the BA was that the project *may affect but is not likely to adversely affect* the Canada lynx and that there would be no effect to designated critical habitat. The USFWS concurred with this determination.

Wildlife BA Page 21 (Statement of Findings) - The proposed action **may affect, but is not likely to adversely affect** the lynx. This determination is based on: 1) 677 acres {4%} of LAU converted to the early stand initiation stage, 2) 560 acres (3%) of LAU will receive regeneration harvest, (3) no

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precommercial thinning included in project, (4) 493 acres of harvest in stands that cover surveys demonstrate do not meet standards for lynx. Additionally, lynx presence has not been confirmed on the Cabinet Ranger District since 1998. Habitat manipulation that has the potential to increase snowshoe hare foraging habitat could increase local hare populations that may benefit any transient lynx that could happen through. Snow conditions will likely continue to limit habitat quality for lynx in this area. The proposed federal action will not affect designated Canada lynx critical habitat.

**COMMENT** - *The Pilgrim Creek Project Area (PA) is located in the Clark Fork Grizzly Bear Outside the Recovery Zone (BORZ), which is a designated area where recurring grizzly bear use has been documented adjacent to and outside the Cabinet-Yaak Grizzly Bear Recovery Zone. According to the Pilgrim Creek DEIS:*

*The analysis boundary for direct, indirect, and cumulative project impacts to [grizzly bears] ...and their habitat is the Clark Fork grizzly bear outside the recovery zone reoccurring use polygon... This is the appropriate boundary for the analysis of effects because of the low number of bears potentially inhabiting the area and the size of the area (>100,000 acres). The BORZ remains the appropriate scale at which to evaluate cumulative effects to bears from this project.*

*Within BORZ polygons there is no MS-1 or MS-2 habitat and habitat standards are different from those in the Recovery Zone. The standards in BORZ are:*

- *No permanent increase in total or open road density above baseline levels.*
- *Potential increases in miles of open or total roads must be compensated for with in-kind reductions concurrently or prior to such increases.*
- *A provision for temporary increases in linear miles for projects but also measures to minimize the impacts of such increases, such as seasonal restrictions of public use to the June 16 – August 31 period.*
- *Scheduling considerations in future timber sale planning to avoid concurrent disturbance in multiple watersheds.*

*By meeting these standards the Pilgrim Creek Project is consistent with the Forest Plan Amendments for Motorized Access Management with the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones (USDI 2011). Additionally, a food storage order designed to reduce bear/human conflicts and corresponding mortality risk is in place on the Kootenai NF.*

*Habitat effectiveness and point source disturbance was calculated by buffering proposed timber harvest units and new and existing roads with a ¼ mile buffer on all sides. Human activity within proposed harvest units and along roads has the potential to disturb grizzly bears. These disturbances disrupt a grizzly bear's living patterns, such as the amount of*

*time spent feeding or resting. Ultimately these repeated disruptions may reduce the health and fitness of a bear.*

*Pilgrim DEIS at 3-113, 3-114, 3-115.*

*Affected Environment/Existing Condition [Records of Grizzly Presence in the Clark Fork BORZ]*

*Documented bear activity in the impacted BORZ polygon began in 2001 when a grizzly sow was found dead along the railroad tracks east of Heron, MT. The next spring (2002), three subadult grizzly bears were trapped by USFWS personnel near Heron. The bears were relocated to the Elk Creek and Marten Creek drainages. The female of this group was found dead in 2002. The two male bears have not been heard from since. In 2007, residents east of Noxon, MT reported a grizzly sow with two cubs in the area. The bears were trapped by USFWS personnel and relocated to upper Marten Creek. Within a few weeks the bears returned to Noxon and then crossed the reservoir and entered the Cabinet-Yaak Recovery Zone. During the summer of 2009, two female grizzly bears were captured in the Northern Continental Divide Recovery Zone and moved to the Cabinet-Yaak Recovery Zone as part of an ongoing population augmentation program. By early fall, the two bears were traveling together and had moved south of Noxon Reservoir. One of the bears was shot by a homeowner in their yard. The other sow died when it was hit by a train.<sup>2</sup> There have been no grizzly bears killed on National Forest System lands.<sup>3</sup> During 2008 and 2009, USFWS conducted a hair snagging survey in the Bitterroot Mountains that included the Clark Fork BORZ. That survey did not document the presence of any grizzly bears in the Clark Fork BORZ (Servheen and Shoemaker 2010). US Fish and Wildlife Service*

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<sup>2</sup> The information included here regarding grizzly bear fatalities is an indication that the Clark Fork BORZ is a dangerous place for grizzlies to inhabit. One wonders why the captured bears were not relocated to the CYE RZ where they would have had a better chance of surviving, rather than just relocated to different areas within the BORZ.

<sup>3</sup> This statement is incorrect. According to the most recent Cabinet-Yaak Grizzly Bear Recovery Area 2011 Research and Monitoring Progress Report (Kasworm, W.F. et al, 2012): In 2011 there were 5 known mortalities, 3 (60%) of which occurred on USFS lands; in 2010 there were 4 known mortalities, 2 (50%) which occurred on USFS lands; in 2009 there were 4 known mortalities, 3 (75%) which occurred on USFS lands; in 2008 there were 4 known mortalities, none of which occurred on USFS lands; in 2007 the 1 known mortality occurred on USFS lands (100%); in 2006, 2005, and 2004 there were 8 known mortalities, none of which occurred on USFS lands; in 2002 there were 7 known mortalities, 2 (29%) of which occurred on USFS lands; in 2001 there were 4 known mortalities, 1 (25%) of which occurred on USFS lands. Thus the trend over the last 10+ years has been an increase in grizzly bear mortalities on USFS lands. This should have been disclosed and considered in the Pilgrim Creek DEIS grizzly bear analysis.

*trappers were unable to capture a grizzly bear during two months of trapping during the summer of 2011.*

*The existing condition in the Clark Fork BORZ polygon includes 177 miles of open motorized routes and 251 miles of total motorized routes. Pilgrim DEIS at 3-116.*

*Table 3-26, Changes to Grizzly Habitat Parameters by Alternative for the Clark Fork BORZ Polygon indicates that there are currently 176.9 miles of open roads within the Clark Fork BORZ and that the miles of open road will not change under any alternative, i.e., **there will be no increase of open road miles under any of the Alternatives analyzed in the Pilgrim DEIS** (Alternatives 2, 3, 4, 5). This includes the use of open roads and motorized trails during the project. (DEIS at 3-117. Emphasis added.)*

**RESPONSE** – The analysis of potential impacts to grizzly bears is documented in the DEIS (Chapter 3, pages 112-119). All determinations are in compliance with the Endangered Species Act (ESA), based on (1) the project is consistent with the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet Yaak Recovery Area (2011), and (2) informal consultation with the U. S. Fish and Wildlife Service.

**COMMENT** - *Table 3-26 indicates that the miles of total motorized routes will increase during implementation: Alternative 2 would increase the total by 12.7 miles; Alternative 3 would increase the total by 15.3 miles; Alternative 4 would increase the total by 8.1 miles and there would be no increase under Alternative 5 (in spite of the fact that according to the following statement that some existing gated and barriered roads will be opened to accommodate logging under Alternative 5).*

Under **Direct and Indirect Effects** the Pilgrim DEIS at 3-117 states:

*Under alternatives 2 and 3 new roads will be constructed. Additionally, under alternatives 2, 3, 4 and 5 some existing roads that currently have gates or earth barriers in place will be used to access harvest units. All new and currently restricted roads used for the project will be closed with a gate for the life of the project.*

The DEIS at 3-121 states:

*New road construction would occur under two of the alternatives. Alternative 2 includes 1.8 miles of new permanent roads and alternative 3 includes 4.4 miles. Gates will be installed when the roads are built and these roads will only be used by Forest Service Personnel or contractors. Upon completion of post-harvest activities the roads will be left in place, but made impassable to motorized vehicles. ...Alternatives 4 and 5 do not include any road construction.*

*Thus, the newly constructed roads and gated and roads with barriers that will be opened and utilized to conduct logging activities will not be considered “open” by the Forest Service. One assumes that while logging is occurring the temporary gates will be opened to accommodate motorized use associated with the logging and hauling of logs.*

*The main reason they will not be considered open is related to a change in the definition of Administrative Use. Also under Direct and Indirect Effects, the Pilgrim DEIS states, “While the project is active **only administrative use will occur on the roads (FS personnel and government contractors.)**” (Pilgrim DEIS at 3-117, emphasis added.)*

*The definition of “administrative use” appears to have been altered to include actions by “government contractors”, i.e., logging contractors/ purchasers of timber sales. In other words actions associated with implementing a timber sale are included under the definition of Forest Service’s definition of Administrative Use. Prior to the 2011 Access Amendment being adopted administrative use included agency actions such as monitoring or other actions that required travel on closed roads. These actions were sporadic, of short duration and essentially non-invasive and therefore not likely to disturb or displace bears that might be present to any measurable extent. For example, the 2010 Little Beaver Revised BA states:*

*Road Management – Routine road maintenance and administrative use are monitored and analyzed for direct effects on threatened and endangered species. For instance, restricted roads on the District are monitored, and administrative use is limited based on current policies. No additional effects due to the activities proposed with this project, and ongoing administrative activities, are anticipated **since administrative use is typically minimal and random in occurrence.***

*(Little Beaver Revised BA at Appendix E-33, emphasis added.)*

*In any case declaring that roads utilized for logging, yarding and hauling logs are not “open” while those activities are ongoing is absurd, illogical and is likely in violation of the Endangered Species Act (ESA) which requires the protection and restoration of listed species wherever they occur. It certainly ignores the conclusions reached in innumerable scientific papers regarding the effects of roads on grizzly bears. Moreover, logging activities certainly have the highest potential of any action that regularly occurs on USFS lands to disturb and displace bears and to result in section 9 “take” of grizzly bears due to those impacts.*

*The DEIS indicates that the proposed timber sale is likely to be ongoing for 5 to 7 years after the contract is awarded. (Pilgrim DEIS at 2-52.) This will prolong and increase the adverse impacts to grizzly bears. This should have been considered in the Pilgrim Creek impacts analysis for grizzly bears.*

*Furthermore, the Forest Service adds insult to injury by opening the door to keeping those same roads open:*

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*There will be no public access on the new and currently restricted roads in the project area unless project activities are completed during an active bear year and public firewood gathering is feasible. At that point, the road[s] may be opened to the public during the big game hunting season.*

*(Ibid. Emphasis added.)*

**RESPONSE** - The DEIS states on page 117 (Chapter 3), “all new and currently restricted roads used for the project will be closed with a gate for the life of the project. While the project is active only administrative use will occur on the roads (FS personnel and government contractors). There will be no public access on the new and currently restricted roads in the project area unless project activities are completed during an active bear year and public firewood gathering is feasible”.

Any decision to open such roads for public firewood collection would be contingent on compliance with the Access Amendment and other regulations. The grizzly bear season period excludes hunting season.

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**COMMENT** - *Mortality records for grizzly bears indicate that many occur during hunting season. While the Forest Service routinely states that it has no control over hunting or hunting seasons, in this case the agency is not required to keep the roads open for either firewood gathering or hunting. This provision for allowing the roads to stay open should be removed.*

*The Pilgrim DEIS states that:*

*Upon completion of project-related activities all of the previously restricted and new roads used for the project will be closed with a permanent closure device (earth berm, rocks, reclamation) and closure order. There will be no public access on the new and currently restricted roads in the project area. Increases in linear miles of Total Road will be temporary. Upon completion of project-related activity, linear miles of open and total road will return to baseline condition and therefore the project is consistent with the Access Amendment.*

*This may be true but the more important question is whether the relaxed 2011 Access Amendment standards for BORZ are adequate to protect and recover the CYE grizzly population as required by the ESA. Based on the high grizzly mortality rate associated with this BORZ, one easily concludes that they are not adequate.*

*Moreover, **Table 3-27. Grizzly bear habitat impacted by point source disturbance**, indicates that over 2000 acres of grizzly bear habitat will be impacted under Alternatives 2 (2,590 acres), 3 (2,664 acres), and 4 (2,169 acres), and that over 1000 acres will be impacted by Alternative 5*



(1,176 acres). This amount of disturbance over a 5-7 year period has the potential to adversely impact grizzly bears that may be present in the Clark Fork BORZ.

We disagree with the following DEIS statements:

***Regulatory Consistency***

*The project is in compliance with ESA. This statement is based on: 1) Project is consistent with the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones (2011), 2) Informal Consultation with FWS completed.*

***Statement of Findings***

*The proposed action is not likely to adversely affect the grizzly bear. This determination is based on: 1) no permanent increase in mortality risk resulting from the temporary increase in total road density in the Clark Fork BORZ polygon, 2) temporary roads constructed for the project will be restricted to the public, while the project is active, 3) Post-project, roads may be temporarily left open to allow the public an opportunity to harvest firewood, 4) Suitable secure habitat exists within and adjacent to project area, 5) there is the potential for temporary displacement, 6) No change to livestock or food attractant situation.*

*There will be an increase in mortality risk as a result of opening closed roads during project implementation, as well as impacts from overflights of helicopters. Overall, the Pilgrim DEIS fails to adequately analyze and disclose the high potential for the action alternatives to adversely affect grizzly bears.*

**RESPONSE** – The analysis of potential impacts to grizzly bears is documented (project file) as part of the Biological Assessment and the consultation process with the U.S. Fish and Wildlife Service (FWS). Approximately 4,564 acres of prescribed ecosystem burning to improve forage quality and quantity is proposed for the Pilgrim Creek project area. The burning would occur in spring or fall, dependent on the moisture content of the fuel. The ignition of these units would be by hand or helicopter. If the latter tool is used, helicopter activities would not last more than two days in a unit and there would be no landings or refueling in the project area. The burn units are spread across the project area. Not all of the burn units would be ignited at once, due to effects on wildlife, watershed concerns, cost and limited resources of the fire crew to ignite and control numerous fires at once, and public concerns about smoke. It is estimated that the burn management proposal would take a decade to accomplish all of the targeted acres. The prescribed burns would vary from low to moderate severity, leaving a mosaic of burned and unburned areas. This would reduce ladder fuels and promote forage for bears and other big game. Similar to some timber harvest, fire can promote huckleberry growth and production. A grizzly bear in the area may be disturbed by burn activities, the fire and smoke. Once human activities are finished, and the fire or smoke abates, it is expected that bears and other wildlife would return to these areas relatively quickly. Stoen, et al. (2010) found that, when approached

by researcher's helicopters, Brown bears decreased their speed and remained within similar habitat types and terrain. The movements were influenced only about two hours and did not influence the size of the activity areas.

Prescribed ecosystem burns would involve disturbance to bears or other animals from ignition activities, such as noise from a helicopter or human presence, smoke, heat, or any activity that could cause a bear in the vicinity to move away from the disturbing factor. All ignition activities would last no more than two days. This period is satisfactory for fire operations as it gives personnel a chance to observe fire behavior and adjust burn prescriptions for weather or fuel conditions. The effects of burning are expected to be from light to moderate intensity. Forage production and restoring fire frequency to the area would be the goals of the prescribed burns. The approximately 4,564 acres proposed for burning would be spread out over time (10 years) and space (project area is 29,987 acres).

Prescribed burn units vary in size, but the time frame to ignite each unit would be no more than two days. Burning would create short-term disturbance effects that would be relaxed almost immediately. The effects would be expected to disturb grizzly bears for no more than a brief period. Bears would be expected to utilize these areas rapidly after burning as grasses and forbs respond with a flush of young, palatable vegetation. Early successional habitats will remain attractive to bears until canopy closure and successional processes change forage composition and condition in the absence of other disturbance, but may provide benefits for as long as 50 years on some sites.

The use of helicopters to accomplish the prescribed burning associated with the Pilgrim Creek Project does not change the original finding of the BA. The proposed action *may affect, but is not likely to adversely affect* the grizzly bear. This determination is based on 1) helicopter activity will follow the guidelines in the Level 1 Programmatic Screens; few trips and  $\leq 2$  activities/year and  $\leq 2$  days/activity/analysis area per bear year, 2) there will be no landings within the project area, 3) the duration of the activity is short, 4) there will be no lingering effects. The FWS has concurred with these determinations (project file).

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**COMMENT** - *The DEIS states that 47 miles of road would be "maintained or reconstructed." The DEIS does not disclose the present use on or serviceability of all those segments of roads. If any of those are hydrologically neutral, undriveable, and recovering naturally then the above cited proposed actions could easily result in the same effects on wildlife, soils, water and other resources as new road construction—and that must be disclosed.*

**RESPONSE** – All proposed actions are analyzed in the DEIS, including road maintenance and reconstruction activities. Analyses include, (1) *Soils*, Chapter 3, pages 233-235, 243-245, and 251-252. Road prisms to be reconstructed do not result in additional detrimental soil disturbance, as the prisms have been on the landscape for an extended period (up to 50 years),



and they are currently considered as 100% DSD (page 235); (2) *Wildlife*, pages 63, 67-68, 72-73, 81, 92, 100, 102, 114, and 117-119; *Hydrology*, pages 163, 165-167, 170-172, 177-180, 185-194, and 196-197; *Fisheries*, pages 220-223 and 226-231; and elsewhere in the DEIS.

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**COMMENT** - *The DEIS mentions that “A number of impassable, non-system unclassified roads have been identified through the Travel Analysis Process as being unneeded for long-term forest management.” The DEIS does not indicate if, other than the 49 segments (approximately 21 miles proposed to be “administratively reclassified,” there are other non-system, unclassified roads that the Travel Analysis Process might have deemed necessary for forest management. This is important since many of such roads may not be hydrologically neutral or otherwise ecologically sustainable as are apparently those 49 segments.*

**RESPONSE** - During the EAWS process it was necessary to prioritize road segments to survey due to manpower and budget constraints. We surveyed road segments in locations and on land types where resource concerns had the highest potential for problems, and in Pilgrim Creek found relatively few old road segments that warranted further action. While we cannot say that there are no problems on other roads, we can say that the highest potential sites were surveyed and we recognize that other roads do exist that will need to be examined at some point in the future. Based on the stratification and surveys completed so far we feel confident that the risk of road failures in the short term is low.

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**COMMENT** - *The DEIS relies upon the above cited road maintenance and reconstruction as meeting its arbitrary, likely temporarily limited benefits. It does not disclose that these repairs and/or upgrades may have only temporary beneficial effects until time renders them inadequate.*

**RESPONSE** – See response above for comment related to road maintenance and reconstruction.

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**COMMENT** - *The DEIS mentions the existence of motorized trails in the project area, but there is not map of locations, and there is no discussion of their consistency with forest plan and other regulatory direction and policy. Also, since off-road motorized intrusions in unauthorized locations have caused significant impacts on many parcels of public lands in recent years, the EIS must address this explicitly.*

**RESPONSE** - There were no activities proposed that would alter trail status in the project area, nor were there any issues raised during scoping of the proposed action. Motorized trails are shown on the Cabinet Ranger District Motorized Use Map (MVUM), available at [http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5364513.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5364513.pdf)

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**COMMENT** - *Consistent with restoration, we support implementation of FS policy to **right-size the road network** to achieve the ecologically sustainable **minimum road system** necessary. Annual maintenance must be affordable, leaving no significant chronic unmet needs which tend to cause long-term ecosystem stressors. We believe that the Transportation Analysis Process is something in which the agency should be inviting the public to collaboratively participate, and indeed provisions in the forest plan require this be addressed in all project planning.*

**RESPONSE** – The Transportation Analysis is included in the project file, and discusses these issues and others in detail.

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**COMMENT** - *The DEIS indicates at TMDL for Pilgrim Creek is in the works, but it doesn't acknowledge a process for insuring the project would contribute to the final TMDL.*

**RESPONSE** –Pilgrim Creek is not listed for a pollutant - the probable causes for impairment as listed in the LCF TMDL relates to “*physical substrate habitat alterations*”. These types of alterations generally describe cases where the stream channel has been physically altered or manipulated and led to a loss of habitat for fish and aquatic life. Recommendations within section 7.4.2 (Pollution Restoration Approach) of the LCF TMDL for areas listed for pollution such as Pilgrim Creek state; “*Typically, habitat impairments are addressed during implementation of associated pollutant TMDL's. Therefore, if restoration goals within the Lower Clark Fork TPA are not also addressing pollution impairments, additional pollution-related BMP implementation should be considered.*”

All action alternatives incorporate BMP implementation. Recommendations in terms of abating road derived sediment have been addressed in the project on all haul roads in the project area. Existing condition road-derived sediment at these locations have been modeled and estimated to be delivering roughly 27 tons/year to nearby channels. Following the completion of the road drainage work which will include culvert upgrades, disconnecting ditches and other road surface drainage activities, sediment delivery is expected to drop to roughly 3 tons/year or an 89% reduction in all of the proposed haul roads (see Table 3-56 on page 3-188 of the DEIS).

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**COMMENT** - *The DEIS does not demonstrate project/area consistency with Riparian Standards for wildlife and fish: 3 c, d, and e. So for example, no estimates of fish populations are disclosed.*

**RESPONSE** – There are no modifications to RHCAs proposed for this project, so all snags will be retained within RHCAs by this project. Recreational fishing is generally not provided by the small streams on NFS lands within the project area. The West Fork of Pilgrim and Skeleton Creek (a tributary to the West Fork) support a population of westslope cutthroat trout that provide little,

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if any, recreational fishing. Recreational fishing on the mainstem of Pilgrim Creek is also limited and access is limited to private land only, for the most part. Very limited access is available near the mouth. Population estimates have been conducted by WWP (1995), Chadwick (2001), and Avista (2011). Survey locations, intensities, and methodologies were different and prohibit easy comparisons, but the westslope cutthroat trout population in the West Fork has been consistently determined to be a strong population without nonnative presence. Populations in the lower mainstem (on private land and with access to Cabinet Gorge Reservoir) are dominated by nonnatives and have shown shifts over time in species composition. None of this lower mainstem would be considered a high priority stream reach in need of special management.

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**COMMENT** - *For bull trout, the DEIS does not explain how some project effects on bull trout can properly be summarized by a “no effects” determination.*

**RESPONSE** – Effects common to all action alternatives are discussed on pages 218-224. A summary of anticipated effects is included on page 3-226, cumulative effects are discussed on 227-230, and on 3-230 the statement of findings for TES species includes the following:

Based on the analysis above, the effects determination for bull trout is that the action alternatives would have **No Effect** on bull trout or designated critical bull trout habitat. This determination is based on: a) minimal cumulative PFI in mainstem Pilgrim Creek; b) the distance of sediment generating activities from occupied habitat; c) seasonal isolation from sediment generating activities (dry reach and timing restriction); and d) a half-mile long beaver dam complex sediment trap upstream from occupied habitat.

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**COMMENT** - *The DEIS does not explain why quantitative estimates of sediment yield cannot be made for all project area roads. Fly, et al., 2011 is an example of how this can be done, leading to transparent and appropriate prioritization of restoration actions.*

*Where does the EIS disclose ongoing sediment effects of road segments that are not proposed to be used as haul routes?*

**RESPONSE** - From Fly, et al., 2011:

*Through an interagency agreement, the U.S. Environmental Protection Agency (USEPA) provided funding for the field inventory and data analysis in order to conduct GRAIP analysis for roads and streams within the Middle Fork Payette River watershed. **Without this funding, the project would not have been possible** (emphasis added).*

In the Pilgrim Creek Watershed Assessment and Conceptual Design Report (River Design Group and USFS, 2003), road surveys sampled high priority roads and found that “Road systems with

drainage issues are generally located high in the watershed and are not causing immediate harm, but are future risks.” (p. 48).

While a complete inventory may have been desirable, our sampling techniques identified the highest risk road locations for field verification. All roads to be used by the project were surveyed in order to quantify sediment contributions, and open roads would be most affected by project activities, particularly log hauling.

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**COMMENT** - *Since forestwide distribution of native species is treated as a relevant subject of this DEIS, it should also disclose the segments of streams where native trout have been extirpated on the KNF.*

**RESPONSE** - The analysis defined the spatial and temporal bounds of analysis (DEIS 3-203) and concluded that the appropriate scale to evaluate cumulative effects for this project was at the most downstream point of effect at the confluence of project area streams with the Clark Fork River.

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**COMMENT** - *The forest plan relies upon quantitative Riparian Habitat Objectives to protect aquatic habitat, and contains a standard requiring that management activities do not retard attainment of RMOs. The DEIS indicates that some RMOs are not currently being attained, but provides no **quantitative information** that demonstrates project consistency with the standard.*

**RESPONSE** - RMOs established for forested systems by INFS include pool frequency, large woody debris, temperature, and wetted width to depth ratio.

3-213: Fish habitat conditions in main-stem Pilgrim Creek are highly variable by reach. **The entirety of Pilgrim Creek below its confluence with the West Fork Pilgrim Creek lies on private land where forest plan standards do not apply.** Pool frequency in lower Pilgrim Creek is below the RMO standard and quality pools are limited. However, pool frequency in middle reaches (R1E and R1F) exceeds the RMO standard and quality pools are relatively abundant. Pools are generally wide relative to their depth and on average do not meet the RMO width/depth standard (<10) for any survey reach. LWD is relatively lacking and meets the RMO standard in only one reach in lower and one reach in middle Pilgrim Creek. Stream temperature data indicate that lower Pilgrim Creek is warm relative to the INFS RMO standard and not suitable for native fish spawning, rearing or adult holding. However, suitable habitat for western pearlshell is present only in lower Pilgrim Creek where the Rosgen C channel type exists.

Table 3-61 discusses, in quantitative terms, existing fish habitat characteristics of project area streams by reach including pool frequency, LWD abundance, temperature, and width to depth ratios.

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**COMMENT** - *The DEIS at 3-168 states:*

*A collaborative watershed assessment of the Pilgrim Creek drainage (2004) outlined the existing watershed and fisheries condition, prioritized restoration locations, and currently acts as a conceptual planning document for watershed restoration. From 2006 to present approximately 3000 lineal feet of channel has been restored in the mainstem and the West Fork of Pilgrim Creek. More work may be completed in the future upon available funding.*

*The DEIS inexplicably fails to disclose the restoration priorities.*

**RESPONSE** – The restoration priorities are contained in the referenced watershed assessment. The purpose and need of the project did not include restoration because our priorities for native salmonid restoration lie in other drainages at present. Given limited funding and time we are focusing our efforts where native species assemblages are largely intact and where restoration has the potential to improve habitat for native species and will not benefit non-natives disproportionately

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**COMMENT** - *The DEIS states: “BMP effectiveness on the Kootenai has been monitored and is shown to be 95 percent effective in reducing sediment (KNF 2011).” Also, “BMPs on the Kootenai have been effective 95 percent of the time (KNF 2011).” These statements cite the same report with the same percent, but have completely different meanings. What are the two values producing the .95 ratio in that report?*

**RESPONSE** – BMP monitoring has shown that BMPs are generally effective 95 percent of the time and are implemented 95 percent of the time. Sediment reductions are not quantified on a percentage basis.

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**COMMENT** - *The Region 1 Soil Quality Standards (SQS) are quantitative ( $\leq 15\%$  detrimental soil disturbance), demonstrating consistency and compliance involves disclosing the amount of detrimental soil disturbance (DSD) that now exists in Activity Areas, and what the cumulative totals would be following disturbance by trails, roads, fire lines, and other causes of DSD.*

*The DEIS provides a very vague explanation of the methods used to use measured soil survey data from assessment in the field to estimate total DSD for each proposed treatment unit. The accuracy of estimates given for previously impacted units is doubtful.*

**RESPONSE** - All units containing evidence of existing soil disturbance related to past management activities received a full qualitative field survey using R1 Soil Survey Procedures.

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Field soil surveys consisted of random stratified transect/sample point methods with confidence intervals at or above 80%  $\pm$  5% with the majority of surveys being 95%  $\pm$  5%. Completed soil surveys can be found in the Soil Project File and/or District Files. Existing detrimental soil disturbance numbers are a result of all currently measureable effects of past actions in each activity area, including but not limited to: timber harvest (trails and landings), temporary road construction, management related burns, grazing, off highway vehicles, natural disturbances, firewood gathering, etc. These methods provide data that is used in the analysis to determine if Forest Plan and Regional Soil Quality Standards would be met. (DEIS 3-233)

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**COMMENT** - *The DEIS also lacks an adequate cumulative effects analysis in that it fails to provide estimates of DSD in any areas not proposed for treatment.*

**RESPONSE** - The direct and indirect effects of the alternatives will focus on individual soils analysis areas as defined by the Forest Service Manual (R-1 Supplement No. 2500-99-1):

“Analysis Area: A soils analysis area is a discrete land area affected by management activity to which soil quality standards are applied. Activity areas must be feasible to monitor and include harvest units within timber sale areas, prescribed burn areas, and grazing areas or pastures with range allotments. All proposed temporary roads, landings and skid trails associated with proposed harvest areas are included within the analysis area. (DEIS 3-233)

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**COMMENT** - *The DEIS also fails to adequately explain how measurements of conditions relating to measured soil damage equate with effects on short- and long-term soil productivity. The DEIS also ignores much science when it claims that soil erosion, displacement, and compaction do not affect soil productivity.*

*The DEIS states, “In proposed secondary entry harvest units which currently are equivalent or exceed 8% current DSD the proposed ground based harvest activities are proposed as having approximately a 50% disturbance value compared to similar harvest activities in currently undisturbed soils (Louis Kuennen pers. comm. 2011).” The DEIS does not provide a sufficient basis for such a quantitative assumption.*

**RESPONSE** - There are no previously harvested units proposed for treatment in this project where existing DSD was at or above 8%, so this assumption does not apply to this project. See Table 3-71, Chapter 3, pages 247-249.

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**COMMENT** - *The KNF has no regulatory mechanism, following from NFMA, which addresses the essentially permanent loss of soil and land productivity due to the noxious weeds that active*

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*management cultivates. The DEIS cites no monitoring results that actually demonstrate affirmative control of noxious weed outbreaks, nor is any monitoring of the efficacy of noxious weed treatments cited.*

**RESPONSE** – (DEIS 3-296) The KNF Invasive Plant Management EIS addresses the environmental effects of invasive plant treatments and authorizes control including chemical and biological control. The EIS also states, *“field studies of the effects of herbicides on soil microorganisms are limited. The risk assessments conducted by SERA conclude that the plausibility of adverse effects on soil productivity from any of the proposed herbicides is minimal. Results from studies on 2,4-D, aminopyralid, chlorsulfuron, clopyralid, and metsulfuron methyl indicate that the maximum concentrations projected in the soil following herbicide application would be below the toxic effect level. Laboratory and/or field studies on the other eight herbicides (dicamba, glyphosate, hexazinone, imazapic, imazapyr, picloram, sulfometuron methyl, triclopyr) indicate some level of inhibition in soil microbial activity but substantial impacts on soil – i.e. gross changes in capacity of soil to support vegetation – do not seem plausible. Field experience in the use of these herbicides in cropland situations indicates no change in soil productivity that would inhibit plant growth (3-100).”*

**COMMENT** - *The DEIS’s cumulative effects discussions fail to account for the ecological damage that logging has caused due to deficiencies of large woody debris in past timber operations.*

**RESPONSE** – Cumulative effects of past actions are discussed by various resources in their appropriate section. Specifically, impacts to old growth from past actions are discussed in the DEIS on page 3-48 through 56. Snag availability is discussed on pages 3-58 and cumulative effects are addressed on 3-62.

**COMMENT** - *Alternatives “have the potential to change the VQO from Partial Retention to a Modified status in some areas...” We are not aware of forest plan direction that allows for project activities to change the visual quality objective of an area. The DEIS basically states that some project activities would be inconsistent with forest plan VQOs, which is something else entirely.*

**RESPONSE** - You are correct. The statement should read *“have the potential to change the visual quality of some areas from Partial Retention to Modified”*. However, on page 3-276 it is stated that *“All alternatives would be consistent with the Forest Plan for Scenic Resources by maintaining or improving the VQO objectives with some exceptions in Alternative 2 Activities may diminish the visual rating in some units in MA 12 where changing the scenic resource is allowed to meet other resource goals.”*



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**COMMENT** - *The DEIS Appendix E displays the visual results of the proposed heavy regeneration, but for some reason does not provide a comparison with the no action alternative.*

**RESPONSE** - Page E-1 shows the existing condition of the Tuscor Face area which represents the no action alternative.

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**COMMENT** - *The DEIS's analysis of the impacts of the proposed activities on Inventoried Roadless Areas (IRAs) and unroaded areas (collectively, "roadless areas") is inadequate and violates NEPA. Roadless areas such as those found in the project area vicinity, both inventoried and uninventoried, are of great importance to the public and of high ecological value.*

**RESPONSE** – Analysis in the DEIS was conducted in accordance with relevant law, regulation, and policy. *"FSM 1923 directs evaluation of inventoried roadless areas for recommendation as potential wilderness. The inventory criteria are described in FSH 1909.12 (72.1). The capability of a potential wilderness is the degree to which that area contains the basic characteristics that make it suitable for wilderness recommendation"* DEIS 3-278.

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**COMMENT** - *The DEIS includes some discussion on the adverse impacts of project activities on two specific uninventoried roadless areas of at least 1000 acres, but fails to disclose that there is much scientific support for maintaining the ecological integrity and undeveloped character found in such areas.*

**RESPONSE** – Analysis of effects for other resources conducted for the DEIS considered the effects of proposed activities associated with this project including those in unroaded areas.

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**COMMENT** - *The DEIS's mapping of roadless areas reveals inaccuracies of the IRA boundaries/roadless inventory. Some areas are immediately adjacent to the IRAs without any discernible features excluding them from the IRA.*

*The DEIS at Table 3-83 presents the results of multiple roadless inventory processes. It inexplicably fails to disclose the acreages resulting from those various processes, which have changed since the 1987 Forest Plan ROD. If the FS is constantly changing IRA boundaries, NEPA requires full disclosures and justification based on objective criteria.*

*The cumulative effects analysis of the proposed activities on the IRAs is inadequate and does not comply with the NEPA.*

*The DEIS did not integrate the results of the most up-to-date project area Travel Analysis Process with the analysis of unroaded areas, which would render the issue of unroaded extent and boundaries would be much more transparent. In other words, it would make so much more sense*

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*if this analysis would disclose the details of the TAP for all the roads in close proximity to the roadless areas.*

*Ruggiero, 2007 and Sullivan et al., 2006 provide a commentary on the scientific integrity and reliability of the use of science. The DEIS does not address the issue of potential bias in FS decision making.*

**RESPONSE** - The DEIS IRA maps are generated from the Kootenai National Forest data base and reflect the current boundaries as identified in the Forest Service Roadless Area Conservation, FEIS, Volume 2, 2000 (DEIS pg. 3-277). IRA boundaries are being evaluated as part of the Forest Plan Revision along with consideration for wilderness recommendation. The validation process (project file) prior to the Roadless Rule included criteria for delineation of unroaded areas which were considered at the project level. The areas outside IRAs identified within the Pilgrim Creek project fall short of meeting the criteria as they are nearly surrounded by roads, motorized trails, and ridgelines. One boundary segment (Huckleberry/SF Pilgrim) is a straight line between two roads, which is an acceptable boundary following the delineation guidelines. In addition, the areas identified in the DEIS rated low for wilderness attributes and roadless characteristics. Expanding the IRA boundaries would not benefit the roadless resource beyond simply adding acres and would have negative effects to other resources.

The intent of DEIS table 3-83 is to display current IRAs, size, and relationship to the project area. The analysis focus is on the project effects to the IRAs rather than the history of the process. Neither boundaries nor acres have changed since the 1999 evaluation process. Three IRAs were added during the process: (1) Huckleberry Mountain #699 – 8,959 acres, (2) Devils Gap #698 – 5,349, and (3) Lone cliff West #674a – 5,311, for a total of approximately 20,000 acres. Two IRAs; Lone Cliff Smeads #674 was decreased in size from 6,600 acres to 5,115 acres due to better mapping and East Fork Elk #678 increased in size from 5,000 acres to 6,800 acres due to better mapping techniques and extension of the boundary to the north.

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**COMMENT** - *The DEIS's cumulative effects analysis would be enhanced considerably by a map which shows the locations, dates, and intensity of the past logging activities.*

**RESPONSE** – The cumulative effects catalogue (Summary of Past, Ongoing and Reasonably Foreseeable Actions) is presented in Chapter 3, pages 1-8. As stated on page 2, details, including maps, are included in the project file.

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**COMMENT** - *In closing, we intend that you include in the record and review all of the literature we've cited herein, and a comprehensive, detailed list will be provided shortly. Also, please keep each of our groups on the list to receive further mailings on the proposal.*

**RESPONSE** – Electronic files of all submitted literature cited are included in the project file.

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**COMMENTS FROM MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY – Mr. Robert Ray**

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**COMMENT** - *The draft environmental impact statement (DEIS) refers to the 1996 and 2002 Clean Water Act, Section 303(d) list of impaired waters instead of the more recent 2012 DEQ list of impaired waters. Please revise your analysis based on the 2012 list.*

**RESPONSE** - We appreciate your attention to this matter. Information updates in regards to this most current list will be finalized within the FEIS. Revising this portion of the document will provide for the most up to date information. These updates will not affect the water resource analysis for the Pilgrim Creek project. I've included the updated information below that will replace portions of pages 3-160 to 3-161 of the DEIS:

Montana's 1996 303(d) list classified 11 miles of Pilgrim Creek as impaired (DEQ, 1996). A more recent 2002 303(d) list included 7 miles (channel length re-measured in 1999) of Pilgrim Creek from the headwaters to the mouth at Cabinet Gorge Reservoir (DEQ, 2002). The most current 2012 list includes 6.9 miles of Pilgrim Creek from the headwaters to the mouth. Table 3-47 includes the levels of beneficial use support for Pilgrim Creek as classified in the 2012 303(d) list.

A water body is considered to be "fully supporting" when it is at its best or most natural condition. When one or more beneficial uses are not fully supported due to human activities the water body may be rated as either "not supporting" or "partially supporting" the affected use or uses. A "threatened" rating indicates that there is evidence that one or more fully supported uses may soon be impaired (State of Montana 1996).

Probable causes of impairment, as identified on the 2012 303(d) list (Table 6-2), include: Physical substrate habitat alterations. Pilgrim Creek was classified as a 4C watershed. A TMDL is not required in these types of watersheds because the cause of impairment is not a pollutant. Physical substrate habitat alterations are considered pollution and although there are no specific TMDL goals, measures are outlined within the Lower Clark Fork TMDL for restoration of these types of segments (DEQ, 2010). The recommendations outlined include mostly BMP implementation and monitoring.

Pilgrim Creek is classified as an A-1 water body. Waters classified A-1 are high quality waters suitable for drinking, culinary and food processing purposes after conventional treatment for removal of naturally present impurities. Water quality must be suitable for bathing, swimming, and recreation; growth and propagation of salmonid fishes and

associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply (State of Montana 1996).

The CWA also requires states to identify water bodies they believe are not meeting water quality standards and are at risk of not supporting their designated beneficial uses. These water bodies are called Water Quality Limited Segments (WQLS). There is one WQLS water body within the Pilgrim Creek Analysis Area - Pilgrim Creek. With the exception of the Noxon Face tributaries, Stevens Creek and Smeads Creek, the entire analysis area falls within the watershed of this WQLS.

The 2012 beneficial use concerns for Pilgrim Creek are identified in Table 3-47, which shows that it has been given a status of Partial Support of aquatic life due to physical substrate habitat alterations. Probable sources of impairments include channelization, grazing in riparian or shoreline zones, and streambank modification or destabilization (DEQ 2012).

**Table 3-47. 2012 Pilgrim Creek Water Quality Limited Segment information**

<i>Listed Stream Segment</i>	<i>Beneficial Use Support Status</i>	<i>Probable Causes</i>	<i>Probable Sources</i>	<i>Water Quality Category</i>
<i>Pilgrim Creek - 6.9 miles, from source to mouth</i>	<i>Aquatic Life Support (Partial)</i>	<i>Physical substrate habitat alterations</i>	<i>Channelization Grazing in Riparian or Shoreline Zones, and Streambank Modifications &amp; destabilization</i>	<i>4C - TMDLs are not required; no pollutant- related use impairment identified.</i>

A Total Maximum Daily Load (TMDL), including a Water Quality Restoration Plan, has been developed for segments listed for pollutants in the Lower Clark Fork River watershed. Although Pilgrim Creek is not listed as a pollutant it is still on the 303(d) list for substrate habitat alterations. Problems associated with these alterations are exacerbated by increases in instream sediment loading from forest roads and other forest management activities. Excess sediment in streams is a form of non-point source pollution, defined as a pollutant with many diffuse sources. Non-point source pollution can often be controlled through soil, water, and land management practices (including State Best Management Practices, known as BMPs). Best Management Practices focus on preventing erosion and the delivery of sediment to water bodies.

**COMMENT** - *While there is no TMDL for Pilgrim Creek, water quality issues associated with the Creek are addressed in the Lower Clark Fork Tributaries Sediment TMDLs and Framework for*

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*Water Quality Restoration. In finalizing the DEIS, please review and apply the recommendations from this TMDL document.*

**RESPONSE** - Although Pilgrim Creek is not listed for a pollutant, it is listed for pollution that could be linked to a pollutant. The probable causes for impairment as listed in the LCF TMDL relates to “physical substrate habitat alterations”. These types of alterations generally describe cases where the stream channel has been physically altered or manipulated and led to a loss of habitat for fish and aquatic life. Recommendations within section 7.4.2 (Pollution Restoration Approach) of the LCF TMDL, for areas listed for pollution such as Pilgrim Creek state; “Typically, habitat impairments are addressed during implementation of associated pollutant TMDL’s. Therefore, if restoration goals within the Lower Clark Fork TPA are not also addressing pollution impairments, additional pollution-related BMP implementation should be considered.”

All action alternatives incorporate BMP implementation. Recommendations in terms of abating road derived sediment have been addressed within the project on all haul roads in the project area. Existing condition road derived sediment at these locations have been modeled and estimated to be delivering roughly 27 tons/year to nearby channels. Following the completion of the road drainage work which will include culvert upgrades, disconnecting ditches and other road surface drainage activities, sediment delivery is expected to drop to roughly 3 tons/year or an 89% reduction in all of the proposed haul roads (see Table 3-56 on page 3-188 of the DEIS).

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**COMMENT** - *Pilgrim Creek, 6.9 miles in length, is impaired due to physical substrate habitat alterations. Problems associated with these alterations are exacerbated by increases in instream sediment loading from forest roads and other forest management activities. Please ensure that BMPs are implemented, frequently monitored, and continually maintained along the proposed haul road near Pilgrim Creek. These BMPs must be sufficient to protect existing water quality, and in fact, should be implemented in a manner that will reduce siltation/sediment inputs with an eye towards meeting water quality standards and full beneficial use support over the next ten years.*

**RESPONSE** - A fair amount of the proposed BMP work has been completed under a recently administered public works contract. The upgrades took place on the majority of roads 149, 2744 and 2706 where haul routes are planned in relation to the Pilgrim Creek project. BMP monitoring occurs yearly on the Cabinet Ranger District and the rest of the Kootenai National Forest. In the coming years BMP audits will occur specific to these planned haul routes in the Pilgrim Creek project area.

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**COMMENT** - *Please consider adding additional, instream sediment monitoring to the monitoring plan in Appendix J. Measurement methods might include Wolman pebble counts, instream turbidity measurements, or McNeil core sampling.*

**RESPONSE** - I agree that these additional in-stream measurements would help in evaluating the effects of this project and be a great addition to the monitoring plan in Appendix J. The reality is that the allotted funding for monitoring is minimal and will narrowly cover the costs of the monitoring already planned. Thank you for your comment.

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**COMMENT** - *In addition to the recommendations above, I encourage you to regularly evaluate whether project BMPs are sufficient to address the sediment loads that are likely to incur due to logging operations and road construction.*

**RESPONSE** - Similar to the responses above; project level monitoring will be completed to the best of our ability with allotted funding. BMP implementation and monitoring is one of the Kootenai National Forests more visible watershed targets and associated programs are generally supported.

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#### **RESPONSES TO COMMENTS FROM DICK ARTELY**

**NOTE:** Mr. Artley submitted numerous documents and attachments as part of his comments. We consider all comments here and begin with this introductory (email) comment, followed by responses to his attachments.

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**COMMENT** - *Unlike the References Section Contained in the DEIS, the Opposing Views Attached to these Comments Describe the Resource Degradation Inflicted to the Forest Ecosystem caused by Logging.*

**RESPONSE** - All comments received are considered. The EA includes a comprehensive analysis of potential environmental impacts related to the proposed actions. Literature citations sent by this commenter have been reviewed and considered for relevance and each is responded to in this document, as required by law, regulation and policy.

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**COMMENT** - *Much of the Literature Identified in the References Section of the Pilgrim Timber Sale DEIS has not been Peer Reviewed*

**RESPONSE** - There is no requirement that all information used in environmental analyses be peer reviewed.

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**COMMENT** - *Ranger Gubel, in this DEIS you Describe the Project with a Euphemism Intending to Hide the Real Actions from the Public that are being Proposed. The DEIS P&N Statements Indicate that One Reason for the Timber Sale is to provide Timber Products to Local Communities. Ranger Gubel, you follow the USFS Script Perfectly.*

**RESPONSE** – No response warranted.

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**COMMENT** - *Harvesting Dead Lodgepole Pine to Eliminate Mountain Pine Beetle Activity in the Project Area Eliminates the Natural Resource Benefits Caused by this Natural Disturbance Event.*

**RESPONSE** – Proposed actions are not designed to “eliminate mountain pine beetle activity”.

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**COMMENT** - *If the Responsible Official is Really Concerned about Aquatic Species’ Health the Final EIS Must Indicate that All Temporary Roads will be Obliterated after Use*

**RESPONSE** – Potential impacts to aquatic species are analyzed and disclosed in the DEIS, Chapter 3, pages 201-231.

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**COMMENT** - *The Responsible Official Indicates that 2.4 Miles of System Road will be constructed!*

**RESPONSE** – Concur.

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**COMMENT** - *The Predicted Environmental Consequences Described in Chapter 3 of the DEIS are Untrue and Deceptive*



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**RESPONSE** - The DEIS presents the results of comprehensive analyses of potential environmental impacts related to the proposed actions, following the protocol required under NEPA and all related law, regulation and policy.

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**COMMENT** - *Ranger Gubel, you Choose to Circumvent the Will of the American Public to Provide Volume for the Natural Resource Extraction Corporations*

**RESPONSE** – No response warranted.

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**COMMENT** - *The courts require agencies to “consider important aspects of the problem.” The Responsible Official has Conveniently Overlooked Scientific Literature that Described the Adverse Ecosystem Effects of the Proposed Action.*

**RESPONSE** - The DEIS presents the results of comprehensive analyses of potential environmental impacts related to the proposed actions, following the protocol required under NEPA and all related law, regulation and policy. This protocol includes extensive consideration of research and scientific literature, and as well as consideration of opposing viewpoints, as expressed in this Response to Comments and elsewhere.

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**COMMENT** - *Herbicides Containing Glyphosate must Never be used on Public Land for Any Reason.*

*The following articles explain what Monsanto is doing to Americans who won't eat GMO foods and farmers who won't plant GMO seeds*

*Tell Obama and Vilsack that Monsanto's Roundup Ready Alfalfa is Not OK*

*Judge calls for compromise Wallowa herbicide plan.*

*Danish water contaminated by roundup®, ban imposed.*

*Glyphosate polluting Danish water.*

**RESPONSE** - – Irrelevant to the decisions to be made. Roundup (glyphosate) is a licensed and legal herbicide for label compliant use in the United States.

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**FROM DICK ARTLEY** – Titled “attachment 4 road construction harm”.

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**COMMENT** - *Fragmentation has been considered as one of the most major factors that lead to the decline of many wildlife species (Brittingham and Temple 1983, Yahner 1988, Winslow et al. 2000) because fragmentation tends to decrease population productivity (Robinson et al. 1995).*

*Al-jabber, Jabber M. 2003, “Habitat Fragmentation: Effects and Implications”*

<http://faculty.ksu.edu.sa/a/Documents/Habitat%20Fragmentation%20Effects%20and%20Implication.pdf>

**RESPONSE** - Samson (1997), states “Recent experimental evidence suggests habitat fragmentation in ecosystems with a high natural disturbance has little effect on species survival rates owing to the adaptation of natural disturbance regimes.” Estill (1996) and Samson recommend not addressing the issue of fragmentation at the project level. Potential impacts to wildlife and plant species are presented in the wildlife and plants sections of the Revised EA (Chapter 3, pp. 58-126 and 228-237).

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**COMMENT** - *“Soil erosion rates due to debris slides were many times higher on forests with roads, landings, and logging activity than on undisturbed forests.”*

*Amaranthus, Mike P. Ph.D., Raymond M. Rice Ph.D., N. R. Barr, and R. R. Ziemer Ph.D. “Logging and forest roads related to increased debris slides in southwestern Oregon.”, Journal of Forestry, Vol. 83, No. 4. 1985.*

<http://www.humboldt.edu/~rrz7001/pubs/Ziemer85.PDF>

**RESPONSE** - This paper reviews landslide frequency as affected by forest management in the coastal mountains of Southwest Oregon. The authors found a six-fold increase in landslide volume in Forest Service-logged areas compared with un-harvested areas, as well as erosion rates that were 100 times greater on roads and landings compared with undeveloped areas. The study area geomorphology and climate are completely different from that of the Pilgrim Creek project area. Most important to note, however, is the fact that no landslides have been found within the project area. The EA acknowledges the effects of roads on erosion (sedimentation). These effects are disclosed in the EA in the Aquatics and Hydrology sections.

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**COMMENT** – *‘Roads may have unavoidable effects on streams, no matter how well they are located, designed or maintained. The sediment contribution to streams from roads is often much greater than*

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*that from all other land management activities combined, including log skidding and yarding.’ (Gibbons and Salo 1973). Research by Megahan and Kidd in 1972 found that roads built in areas with highly erosive soils can contribute up to 220 times as much sediment to streams as intact forests.”*

*“Applying Ecological Principles to Management of the U.S. National Forests” Issues in Ecology Number 6 Spring 2000*

<http://www.watertalk.org/wawa/ecosci.html>

**RESPONSE** – Cited paper is a position paper that cites a number of studies to support its' position on active management on NFS lands. The Pilgrim Creek hydrology and aquatic analyses both acknowledge the impacts of the existing road condition and needed changes to those roads to reduce sediment delivery to adjacent streams (see Chapter 3 of the EA).

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**COMMENT** – *Plot-level studies have demonstrated the ability of forest roads to intercept and route both subsurface and surface overland flow more efficiently to the stream network.*

*Borga, M., F. Tonelli, G. Dalla Fontana and F. Cazorzi, “Evaluating the Effects of Forest Roads on Shallow Landsliding” Geophysical Research Abstracts, Vol. 5, 13312, 2003*

<http://www.cosis.net/abstracts/EAE03/13312/EAE03-J-13312.pdf>

**RESPONSE** –There is very little relevance to the proposed project. The landscape, climate, soils, and geology are so different that almost no correlation could be reached in regard to the proposed project. That being said, the premise of the study talks about the road network disrupting the surface and subsurface stream network and temporary roads were located with no proposed stream crossings to make sure that the project does not disrupt the stream network. Road maintenance on haul routes will help improve stream connectivity affected by the present road system. The analysis indicated there should be no sedimentation from temporary roads. Decommissioning of the proposed temporary roads will effectively mitigate any effects on subsurface flows. We expect there would be no measurable effects to aquatic resources while the roads are in place.

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**COMMENT** – *A large scale land use experiment has taken place over the last 40 years in the mountainous areas of the northwestern U.S. through timber harvesting.*

*Bowling, L.C., D. P. Lettenmaier, M. S. Wigmosta and W. A. Perkins, “Predicting the Effects of Forest Roads on Streamflow using a Distributed Hydrological Model” from a poster presented at the fall meeting of the American Geophysical Union, San Francisco, CA, December 1996.*

<http://www.ce.washington.edu/~lxb/poster.html>

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**RESPONSE** –This poster on the internet does not provide much background information, and is considered irrelevant to the decisions to be made.

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**COMMENT** – *Many of the conclusions and assumptions contained in the Roads Report are based on analysis of the positive contributions of roads.*

*The present road system constitutes a legacy of current and potential sources of damage to aquatic and riparian habitats, mostly through sedimentation, and to terrestrial habitats through fragmentation and increased access (Amaranthus et al 1985).*

*Brister, Daniel. "A Review and Comment on: Forest Service Roads: A Synthesis of Scientific Information, 2nd Draft, USDA Forest Service." December 1998.*

<http://www.wildlandscpr.org/forest-service-roads-synthesis-scientific-information-socio-economic-impacts>

**RESPONSE** – The article cited is an opinion paper offering review and comment on “Forest Service Roads: A Synthesis of Scientific Information”, 2nd Draft, USDA Forest Service, December 1998. The final document, “Forest Roads: A Synthesis of Scientific Information” (General Technical Report PWN-GTR-509) was published in May of 2001 by the Pacific Northwest Research Station, Portland, Oregon. The quotes displayed by Mr. Artley are taken from the paper written by Daniel Brister, University of Montana, Environmental Studies Program, in December of 1998 to assist the Forest Service in subsequent drafts. The final document was published in May of 2001. The article suggests the Forest Service include, in the final document, an assessment of socio-economic impacts of forest system roads. The final document includes two sections on this topic 1) Direct Socioeconomic and 2) Indirect Socioeconomic Effects. The final document (as did previous drafts) published by the Forest Service in May of 2001 analyzes the effects of existing Forest System roads but does not analyze the effects of temporary roads. The Pilgrim Creek Timber Sale Project does not propose to construct additional Forest System roads; only temporary roads are being considered. Temporary roads would be obliterated following use. The impacts of temporary road construction are disclosed in the EA. The analysis of the socio-economic impacts of the existing Forest System road infrastructure is beyond the scope of this project

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**COMMENT** – *Sediment input to freshwater is due to either the slower, large-scale process of soil erosion, or to rapid, localized “mass movements,” such as landslides.*

*Bunnell, Fred L. Ph.D., Kelly A. Squires and Isabelle Houde. 2004, "Evaluating effects of large-scale salvage logging for mountain pine beetle on terrestrial and aquatic vertebrates." Mountain Pine Beetle Initiative Working Paper 1. Canadian Forest Service.*

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<http://warehouse.pfc.forestry.ca/pfc/25154.pdf>

**RESPONSE** – Not relevant to this project. This article does not contain any data; it is a review of literature on the potential impacts of large-scale salvage logging that hadn't yet occurred. It estimates the effects from large-scale salvage logging without knowing where, at what scale and the timing it will occur. The Furniss citation is a chapter from an AFS publication. In it, he discusses roads and their impacts on watersheds and fisheries. Road location and design to lessen impacts to streams is described as well as promoting culvert design for fish passage. The Cederholm study in Washington State involves a higher precipitation zone, and steeper slopes. Estimated road cover for each 6HUC in the project area is 2.5 percent in -01 and 1.4 percent in -02, based on 60-foot clearing width (an overestimation considering all roads are existing and most cut and fill slopes are vegetated). This study refers to, and estimates effects from, large-scale salvage logging without knowing where, at what scale and timing it will occur. Increased turbidity assumes sediment delivery to streams from activity. Project design (unit location and road improvements) minimizes the risk of measurable increases in sediment delivery. The discussion of road locations, road design, and erosion from roads are relevant to the project and is considered in the hydrology and aquatics report and through the application of Forest Service Soil and Water Conservation measures (BMPs). No landslides were found in the project area.

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**COMMENT** – *The road construction and right-of-way logging were immediately detrimental to most aquatic invertebrates in South Fork Caspar Creek"*

*"Salmonid populations decreased immediately after the road construction."*

*"Sustained logging and associated road construction over a period of many years do not afford either the stream or the 'fish population a chance to recover."*

*Burns, James W., "Some Effects of Logging and Associated Road Construction on Northern California Streams." Transactions of the American Fisheries Society, Volume 1, Number 1, January 1972.*

<http://www.fs.fed.us/psw/publications/4351/Burns72.pdf>

**RESPONSE** – In the project referenced, 66 km of road were constructed, including four crossings, within 76 meters of the stream, plus the entire area between the road and stream was logged and they ran dozers over 41 percent of the stream length in the stream to remove slash and skid trees. Total biomass of invertebrates did not decrease. Only more susceptible orders declined. Recolonization occurred within 2 years and total biomass increased over control stream (N. Fork Caspar). Salmonid populations recovered to within 20 percent of preconstruction level within 2 years. Author stated that most damage was caused by dozers operating in the stream.

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The relevance of this article to the Pilgrim Creek Timber Sale Project is something of a "lessons learned" tale about the importance of minimizing ground disturbance in and near streams. The Pilgrim Creek Project has riparian buffers between all harvest units and streams.

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**COMMENT** – *“Forest roads apparently can serve as a partial filter to the movements of some amphibian species”*

*deMaynadier, Phillip G. and Malcolm L. Hunter, Jr. “Road Effects on Amphibian Movements in a Forested Landscape” From Natural Areas Journal (2000) Volume: 20, Issue: 1, Pages: 56-65*

<http://www.mendeley.com/research/road-effects-on-amphibian-movements-in-a-forested-landscape/>

**RESPONSE** – The DEIS analyzes potential impacts to the western toad, a species who’s potential breeding areas include temporal ponds and road ditches. Due to design considerations regarding stream side buffers and others, there would be no sedimentation increases on any water bodies within the project area.

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**COMMENT** – *The negative effects on the landscape of constructing new roads, deferring maintenance, and decommissioning old roads are well documented.*

*EPA entry into the Federal Register: March 3, 2000 (Volume 65, Number 43) Page 11675, “National Forest System Road Management.”*

<http://www.epa.gov/fedrgstr/EPA-GENERAL/2000/March/Day-03/g5002.htm>

**RESPONSE** – Not relevant to this project; excerpt from a March 3, 2002 Federal Register Notice posted by the Forest Service. The Forest Service concluded that it needed to review its forest road system policy, one of four emphasis items in the agency's National Resource Agenda. The Agency proposed to revise 36 CFR Part 212 to shift the emphasis from transportation development to managing environmentally sound access. This Federal Register notice does not have any bearing on the Pilgrim Creek Project analysis. Road maintenance work is scheduled on roads that would be used to haul timber to reduce sediment delivery to streams (DEIS, Chapter 2, pages 13-14).

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**COMMENT** – *“Fragmentation caused by roads is of special interest because the effects of roads extend tens to hundreds of yards from the roads themselves, altering habitats and water drainage patterns, disrupting wildlife movement, introducing exotic plant species, and increasing noise levels. The land development that follows roads out into rural areas usually leads to more roads, an expansion process that only ends at natural or legislated barriers.”*

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*"Forest Fragmentation and Roads" Eastern Forest Environmental Threat Assessment Center  
U.S. Forest Service - Southern Research Station*

<http://www.forestthreats.org/publications/su-srs-018/fragmentation>

**RESPONSE** – This document discusses the effects of roads related to habitat fragmentation across the U.S. It is general in nature, and irrelevant. The paper provided neither site-specific nor species-specific information relative to Pilgrim Creek project nor the management of Kootenai National Forest management indicator species or designated threatened, endangered or sensitive species.

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**COMMENT** – *Based on road-effect zones, an estimated 15–20% of the United States is ecologically impacted by roads."*

*Forman, Richard T. and Lauren E. Alexander "Roads and their Major Ecological Effects" Annual Review of Ecology and Systematics, Vol. 29: 207-231, November 1998*

<http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.ecolsys.29.1.207?cookieSet=1&journalCode=ecolsys.1>

**RESPONSE** – Relevant to this project; the quoted section above is an abstract from this citation. Many of the effects discussed in this paper are those associated with paved, well-maintained, high-speed roads. However, it is recognized that lower-standard, unpaved Forest roads have effects as well. The effects of displacement and avoidance were addressed in the Forest Plan and provides wildlife secure habitat through management of open motorized road and trail densities.

A couple of other effects discussed in the paper include potential for road-kill and barrier effects. The potential for road-kill as a result of this project is very small, as no roads would be constructed. Hauling on other roads has little potential as well, due to the rough (and low speed) nature of the roads.

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**COMMENT** – *Does the management prescription account for the ecological effects of the road construction and maintenance activities associated with carrying out such activities? Have alternatives to road building been considered? How does the plan attempt to address the effects of roads?" (page 37)*

*Franklin, Jerry Ph.D., David Perry Ph.D., Reed Noss Ph.D., David Montgomery Ph.D. and Christopher Frissell Ph.D. 2000. "Simplified Forest Management to Achieve Watershed and Forest Health: A Critique." A National Wildlife Federation publication sponsored by the Bullitt Foundation*

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<http://www.coastrange.org/documents/forestreport.pdf>

**RESPONSE** – A Transportation Analysis Process (TAP) Report for the project accessed the risks and problems posed by existing roads within the sub-watershed by resource area including safety, watershed and aquatic, terrestrial wildlife, noxious weeds, financial, roads and inventory roadless area risks. The TAP is included in the project file.

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**COMMENT** – *“The authors warned that cutting roads into current roadless areas could bring much more harm to wildlife, soil and fisheries than the beetle-killed trees pose to the forest.”*

*Frey, David “Logging Won’t Halt Beetles, Fire, Report Says” NewWest.net, 3-03-10*

[http://www.newwest.net/topic/article/logging\\_wont\\_halt\\_beetles\\_fire\\_report\\_says/C41/L41/](http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/)

**RESPONSE** – The Pilgrim Creek project does not include construction of new roads into roadless areas. This citation is irrelevant to the decisions to be made.

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**COMMENT** – *“A healthy fishery requires access to suitable habitat that provides food, shelter, spawning gravel, suitable water quality, and access for upstream and downstream migration. Road-stream crossing failures have direct impacts on all of these components.”*

*Furniss, Michael J., Michael Love Ph.D. and Sam A. Flanagan “Diversion Potential at Road-Stream Crossings.” USDA Forest Service. 9777 1814—SDTDC. December 1997.*

<http://www.stream.fs.fed.us/water-road/w-r-pdf/diversionpntl.pdf>

**RESPONSE** – Relevant to this project; this article discusses the potential effects of water being diverted out of road/stream crossings. It is from the water/road interaction technology series produced by San Dimas Technology and Development Center. The message it contains is that road/stream crossings need to be designed in a manner that if the culvert becomes plugged that the low point in the road is at the site of the culvert so as to minimize the potential for water to divert down the road, increasing the amount of erosion and sediment delivery to the receiving water.

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**COMMENT** – *These changes degrade fish habitat because of the increased sedimentation that leads to decreases in water quality, Noon said. And roads fragment wildlife habitat and create areas that animals avoid, often as result of increased hunting, he said.”*

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Gable, Eryn "Battling beetles may not reduce fire risks – report" Land Letter, March 4, 2010

<http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/>

**RESPONSE** – A Transportation Analysis Process (TAP) Report for the Pilgrim project assessed the risks and problems posed by existing roads within the sub-watershed by resource area including safety, watershed and aquatic, terrestrial wildlife, noxious weeds, financial, roads and inventory roadless area risks. The TAP is included in the project file.

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**COMMENT** – *"Roads and skid trails have been identified as a major contributor to increased turbidity of water draining logging areas resulting in increases from 4 to 93 parts per million (Hoover, 1952). Forest roads have been found to have erosion rates from one to three orders of magnitude greater than similar undisturbed areas (Megahan, 1974) and perhaps account for as much as 90 percent of all forest erosion (Megahan, 1972). Forest roads can also cause soil erosion and stream sedimentation, which adversely impact on the nation's water quality (Authur et al., 1998).*

Grace, Johnny M. III Ph.D. 2003. "Minimizing the impacts of the forest road system." In: *Proceedings of the conference 34 international erosion control association; ISSN 1092-2806. [Place of publication unknown]: International Erosion Control Association: 301-310.*

[http://www.srs.fs.usda.gov/pubs/ja/ja\\_grace011.pdf](http://www.srs.fs.usda.gov/pubs/ja/ja_grace011.pdf)

**RESPONSE** – Relevant to this project; the article studied the efficacy of different types of sediment control systems to minimize sediment travel distances through buffers. It contains pertinent information about what type of sediment traps/filters work and is relevant to the road work identified in the project area. Road maintenance on forest roads is designed to minimize erosion. This authors' study points out the efficacy of vegetated buffers along with filter fencing and sediment catchment basins ability to reduce sediment movement from roads.

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**COMMENT** – *"(Road) consequences include adverse effects on hydrology and geomorphic features (such as debris slides and sedimentation), habitat fragmentation, predation, road kill, invasion by exotic species, dispersal of pathogens, degraded water quality and chemical contamination, degraded aquatic habitat, use conflicts, destructive human actions (for example, trash dumping,*

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*illegal hunting, fires), lost solitude, depressed local economies, loss of soil productivity, and decline in biodiversity."*

Gucinski, Hermann Ph.D., Michael J. Furniss, Robert R. Ziemer Ph.D. and Martha H. Brookes, Editors. 2001. "Forest Roads: A Synthesis of Scientific Information." USDA Forest Service, General Technical Report PNW-GTR-509.

<http://www.fs.fed.us/pnw/pubs/gtr509.pdf>

**RESPONSE** – PNW-GTR-509 describes the effects roads have on ecosystems. It is a companion paper to "Roads Analysis: Informing Decisions about Managing the National Forest Transportation System" (USDA FS 1999). The report details the known issues related to road impacts on physical and biological resources, road impacts at various scales, and the socio-economics of roads. The report then describes the known science surrounding these issues. The focus of the report is to help the reader understand how roads function in the landscape.

The Pilgrim project recognizes the impacts that roads have on the landscape. Road maintenance would be conducted, with application of BMPs. All roads, existing and temporary, would be managed and maintained in accordance with Forest Service Soil and Water Conservation Practices (BMPs).

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**COMMENT** – *"Fires in the roaded areas are more intense, due to drier conditions, wind zones on the foothill/valley interface, high surface-fuel loading, and dense stands."*

Hann, W.J. et al. 1997, Landscape dynamics of the Basin. Pp. 337-1,055 in: Quigley, T.M. and S.J. Arbelbide (eds.) An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins: Volume II. USDA Forest Service, PNW-GTR-405

[http://www.fs.fed.us/pnw/pubs/gtr405/pnw\\_gtr405aa.pdf](http://www.fs.fed.us/pnw/pubs/gtr405/pnw_gtr405aa.pdf)

**RESPONSE** – Not relevant to this project; publication speaks of fire-line intensity with relation to clear-cutting live mature over story. The Pilgrim Project does not include any clearcuts.

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**COMMENT** – *The effect of roads on the surrounding forest is compounded by the sprawling nature of the road system in this and many other forests. My data suggest that even relatively narrow roads through forests can produce marked edge effects that may have negative consequences for the function and diversity of the forest ecosystem."*

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Haskell, David G. Ph.D. 1999 "Effects of Forest Roads on Macroinvertebrate Soil Fauna of the Southern Appalachian Mountains"

<http://www.jstor.org/stable/2641904>

**RESPONSE** – Not relevant to this project; the text above is directly copied from the abstract of the paper. This study took place in Tennessee, in the Southern Appalachian Mountains with hardwood tree species; a completely different ecosystem than that of the project area. In summary, the author found that roads significantly depressed the abundance and diversity of macroinvertebrates, due to a reduction in leaf litter, or habitat. Though we do not inventory macroinvertebrates as a matter of course in field surveys, complying with the Northern Region Soil Quality Standards would limit litter layer disturbance within the proposed harvest units.

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**COMMENT** – "Roads remove habitat, alter adjacent areas, and interrupt and redirect ecological flows. They subdivide wildlife populations, foster invasive species spread, change the hydrologic network, and increase human use of adjacent areas. At broad scales, these impacts cumulate and define landscape patterns."

Hawbaker, Todd J. Ph.D., Volker C. Radeloff Ph.D., Murray K. Clayton Ph.D., Roger B. Hammer Ph.D., and Charlotte E. Gonzalez-Abraham Ph.D. "Road Development, Housing Growth, and Landscape Fragmentation In Northern Wisconsin: 1937–1999" *Ecological Applications*: Vol. 16, No. 3, pp. 1222-1237.

<http://www.esajournals.org/doi/abs/10.1890/1051-0761%282006%29016%5B1222%3ARDHGAL%5D2.0.CO%3B2?journalCode=ecap>

**RESPONSE** – This reference looks at the dynamics of road networks over time and how they impact landscape patterns. More specifically, the study looked at relationships between road density changes, development, and landscape patterns, focusing on housing development. From a wildlife standpoint, the reference mentions in a broad context roads as sources of habitat fragmentation, spread of invasive species and increased human use or presence. Please refer to Response to the EA, Wildlife, in Chapter 3 for more detail concerning effects to wildlife and wildlife habitat. Change in drainage network due to roads has been analyzed and the discussion is included in the Hydrology section of the EA.

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**COMMENT** – *Start with the assumption that the U.S. Forest Service a component of the Department of Agriculture, is simply an auxiliary branch of the timber industry and you'll pretty much have the picture of what's going on. Last winter, the Forest Service refused a bid at a timber auction from an environmentalist who wanted to save, not harvest, a stand of evergreens in the Okanogan National Forest in Washington. Instead, the Forest Service accepted a bid of*

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*\$15,000 from a logging company that cut 3.5 million board-feet of lumber in that stand. Try to find a price like that at Home Depot."*

*Ivins, Molly, Creators Syndicate, August 3 1997 08 03*

<http://www.creators.com/opinion/molly-ivins/molly-ivins-august-3-1997-08-03.html>

**RESPONSE** – This is an opinion piece and is conjecture. Effects of proposed activities, including road related activities, on slope stability was addressed in detail in the hydrology and soils disclosures in Chapter 3 of the DEIS. Water quality and the effects of roads on sedimentation were analyzed and the discussion is included in the Hydrology Section (Chapter 3, pp. 159-200).

As to exporting logs overseas, 36 CFR 223.188 specifically prohibits the exporting of unprocessed Federal timber:

**36 CFR 223.188: Prohibitions against exporting unprocessed Federal timber.**

*No person who acquires unprocessed timber originating from Federal lands west of the 100th meridian in the contiguous 48 States may export such timber from the United States, or sell, trade, exchange, or otherwise convey such timber to any other person for the purpose of exporting such timber from the United States. This prohibition does not apply to specific quantities of grades and species of such unprocessed Federal timber that the Secretary of Agriculture determines to be surplus to domestic manufacturing needs.*

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**COMMENT** – *"Although disturbance patches are created by peak flow and debris flow disturbances in mountain landscapes without roads, roads can alter the landscape distributions of the starting and stopping points of debris flows, and they can alter the balance between the intensity of flood peaks and the stream network's resistance to change."*

*Jones, Julia A. Ph.D., Frederick J. Swanson Ph.D. Beverley C. Wemple Ph.D., and Kai U. Snyder. "Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks." Conservation Biology 14, No. 1. 2000.*

<http://www.jstor.org/stable/2641906>

**RESPONSE** – Relevant to this project; the content discussed in this reference material, which discusses the effects roads have on stream networks, describes the premise for the maintenance projects that

would be completed on the haul routes prior to project implementation. Assurance of proper BMP use during road maintenance activity would decrease the effects roads in the project area have on the stream network.

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**COMMENT** – *"In the Pacific Northwest, the two main processes that contribute to sediment production are mass failure and surface erosion from forest roads (Fredriksen 1970, Reid and Dunne 1984). In the Clearwater River basin in the State of Washington, as much as 40 percent of the sediment produced in the watershed was attributed to logging roads (Reid 1980)."*

*Kahklen, Keith. "A Method for Measuring Sediment Production from Forest Roads." Pacific Northwest Research Station, USDA Forest Service. Research note PNW-RN-529, April 2001.*

<http://www.fs.fed.us/pnw/pubs/rn529.pdf>

**RESPONSE** – Relevant to this project; this peer-review literature is an excellent source of data for analyzing affects of roads in the Pacific Northwest where terrain and climate are considerably different that of the project area.

The DEIS acknowledges the effects roads can have on sediment production and includes maintenance measures to reduce sediment in the project area prior to project implementation (see Table 3 in the EA). For the temporary roads proposed, the project limits sedimentation by taking every action necessary including total road obliteration and recontouring. No landslides were found in the project area, and only two landtypes have a "moderate" rating for mass wasting (the remaining ratings are slight). See the Soils section of the DEIS (Chapter 3, pages 232-261) for more detailed information.

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**COMMENT** – *"It is indisputable that roads are one of the greatest threats to the ecological integrity of forested systems and associated river, wetland, lake, and coastal ecosystems. Yet, the USFS has failed to adopt a policy that mandates reversing the worst ecological effects of roads, or that precludes incursion of roads into roadless areas. Despite widespread recognition of these facts, the USFS diverts staff and money to extraordinarily costly salvage logging projects at the expense of reducing the extent of the road network or undertaking needed fine-fuels reductions in unburned forests."*

*Karr, James R. Ph.D., Christopher A. Frissell Ph.D., Jonathan J., Rhodes, David L. Perry Ph.D. and G. Wayne Minshall Ph.D., Excerpt from a letter to the Subcommittee on Forests & Forest Health U.S. House of Representatives. 3 July, 2002.*

[http://www.nativeforest.org/campaigns/wildfire\\_info\\_center/letter\\_from\\_beschta.htm](http://www.nativeforest.org/campaigns/wildfire_info_center/letter_from_beschta.htm)

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**RESPONSE** – Not relevant to this project; the excerpt is from a letter to congress. It refers to a body of literature that documents the adverse impacts of roads on a variety of resources. The letter is a refutation of Forest Service policy on post fire salvage logging and road building. The DEIS recognizes the negative effects of roads in the project area. Road maintenance will be done on haul routes to reduce the impacts of roads used for the project on streams (Chapter 2, pp. 13-14).

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**COMMENT** – *“Forest fragmentation, as scientists call the intentional felling of woodland, is actually two processes. In populated areas such as the Atlantic seaboard, it means reduction in the size of forest tracts, usually due to suburbanization and development. In less inhabited areas--northern New England, for example--forest fragmentation refers to isolation of one patch of forest from another by logging, or by the building of roads or power lines.”*

*Lawren, Bill 1992 “Singing the Blues for Songbirds: Bird lovers lament as experts ponder the decline of dozens of forest species” National Wildlife*

<http://www.nwf.org/News-and-Magazines/National-Wildlife/Birds/Archives/1992/Singing-the-Blues-for-Songbirds.aspx>

**RESPONSE** - It is unclear as what the specific point concerning fragmentation is relative to the Pilgrim project. Refer to responses to the EA, Chapter 3, page 130) for migratory bird disclosures.

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**COMMENT** – *“Forest roads often develop a water-repellent soil layer caused by lack of vegetative cover and changes in soil composition. This can substantially influence how runoff is processed. Erosion, the formation of water channels beside the road, and increased sediment loads in nearby streams are common results of this process (Baker 2003).”*

*“Because they provide easier access to many forest tracts, forest roads often allow more human-caused fires to be ignited.”*

*Lowe, Kimberly Ph.D., “Restoring Forest Roads.” A Northern Arizona University Ecological Restoration Institute publication Working Paper 12. June, 2005.*

<http://www.eri.nau.edu/en/information-for-practitioners/restoring-forest-roads>

**RESPONSE** - This reference looks at the dynamics of road networks over time and how they impact landscape patterns. More specifically, the study looked at relationships between road density changes, development, and landscape patterns, focusing on housing development. From a wildlife standpoint, the reference mentions in a broad context roads as sources of habitat fragmentation, spread of invasive

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species and increased human use or presence. Please refer to the Wildlife section of Chapter 3 and the Transportation Analysis for more specifics concerning how effects to wildlife and wildlife habitat were addressed in the DEIS.

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**COMMENT** – *"If we look at the issue of what we need to learn or the research priorities for forest road hydrology, I would argue that the areas of cutslope hydrology and effectiveness of restoration efforts are perhaps most critical."*

*"At a few sites in the mountains of Idaho and Oregon a substantial portion of the road runoff (80–95%) came from subsurface flow intercepted by the cutslope (Burroughs et al., 1972; Megahan, 1972; Wemple, 1998)."*

Luce, Charles H. Ph.D., 2002. "Hydrological processes and pathways affected by forest roads: what do we still need to learn?" *Hydrologic Processes*: 16, 2901–2904.

<http://www.fs.fed.us/rm/boise/teams/soils/Publications/Luce%202002%20HP.pdf>

**RESPONSE** - Relevant to this project; sediment, water yield, and stream connectivity has been discussed in other response to comments and extensively in the hydrology section of the DEISA. Road maintenance conducted prior to log hauling will help improve the existing road system and road obliteration of temporary roads will effectively account for any lasting effects of the proposed action.

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**COMMENT** – *"Roads in the watershed contribute to sediment production by concentrating runoff, thereby increasing sediment load to the stream network. Most unimproved (dirt) roads connect either directly or indirectly with streams and, therefore, act as extensions of stream networks by effectively increasing watershed drainage density and subsequently sediment loads to streams. In the South Fork subwatershed of Squaw Creek, road connectivity has resulted in an increase in effective drainage density of approximately 250%. Throughout the Squaw Creek watershed, it is estimated that dirt roads potentially contribute as much as 7,793 metric tons/year to the watershed sediment budget."*

Maholland, Becky and Thomas F. Bullard Ph.D., "Sediment-Related Road Effects on Stream Channel Networks in an Eastern Sierra Nevada Watershed." *Journal of the Nevada Water Resources Association*, Volume 2, Number 2, Fall 2005.

[http://www.nvwra.org/docs/journal/vol\\_2\\_no\\_2/NWRAjournal\\_fall2005\\_article4.pdf](http://www.nvwra.org/docs/journal/vol_2_no_2/NWRAjournal_fall2005_article4.pdf)

**RESPONSE** - Relevant to this project; this is another study that looks at the roads impact on the stream network. It also looks at the potential sedimentation associated with road segments.

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The analysis indicates road maintenance completed prior to timber hauling would substantially reduce the effects roads in the project area are currently having on sediment delivery as described in the DEISA. The DEIS acknowledges the effects roads can have on sediment production and includes maintenance measures to reduce erosion from the road surfaces in the project area prior to project implementation (see Chapter 2, pp. 13-14).

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**COMMENT** – *One of the greatest impacts of roads and (especially motorized) trails is their effect on the hydrology of natural landscapes, including the flow of surface and ground water and nutrients. These hydrologic effects are responsible for changes to geomorphic processes and sediment loads in roaded areas (Luce and Wemple 2001). (pg. 12)*

Malecki, Ron W. "A New Way to Look at Forest Roads: the Road Hydrologic Impact Rating System (RHIR)", *The Road-RIPorter*, Autumn Equinox, 2006

[http://www.wildlandscpr.org/files/uploads/RIPorter/rr\\_v11-3.pdf](http://www.wildlandscpr.org/files/uploads/RIPorter/rr_v11-3.pdf)

**RESPONSE** - generic discussion and opinion. For site specific analysis disclosures see Soils and Hydrology sections of the DEIS Chapter 3, pages 159-200.

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**COMMENT** – *"A study was made on 344 miles of logging roads in northwestern California to assess sources of erosion and the extent to which road-related erosion is avoidable. At most, about 24 percent of the erosion measured on the logging roads could have been prevented by conventional engineering methods. The remaining 76 percent was caused by site conditions and choice of alignment. On 30,300 acres of commercial timberland, an estimated 40 percent of the total erosion associated with management of the area was found to have been derived from the road system."*

McCashion, J. D. and R. M. Rice Ph.D., 1983. "Erosion on logging roads in northwestern California: How much is avoidable?" *Journal of Forestry* 8(1): 23-26.

<http://www.fs.fed.us/psw/rsl/projects/water/McCashion.pdf>

**RESPONSE** - Relevant to this project; this reference talks about how not all sediment sources from roads can be avoidable. Road maintenance prior to project implementation will install new culverts and recondition existing culverts that will decrease the effects the existing roads have on the stream network. The DEIS acknowledges the effects roads can have on sediment production and includes maintenance measures prior to project implementation to reduce sediment in the project area (see DEIS).

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**COMMENT** – *Research has shown that roads can have adverse impacts on the water quality on the forest landscape (Authur et al. 1998; Binkley and Brown 1993; Megahan et al. 1991). The forest road system has been identified by previous research as the major source of soil erosion on forestlands (Anderson et. al 1976; Patric 1976; Swift 1984; Van Lear et al. 1997). Furthermore, roads are cited as the dominant source of sediment that reaches stream channels (Packer 1967; Trimble and Sartz 1957; Haupt 1959)."*

*McFero III, Grace, J. "Sediment Plume Development from Forest Roads: How are they related to Filter Strip Recommendations?" An ASAE/CSAE Meeting Presentation, Paper Number: 045015, August 1-4, 2004.*

[http://www.srs.fs.usda.gov/pubs/ja/ja\\_grace017.pdf](http://www.srs.fs.usda.gov/pubs/ja/ja_grace017.pdf)

**RESPONSE** - Relevant to this project; the referenced material discusses the effects of filter strips and their use to control sedimentation. However, the study was completed in Alabama and Georgia, which have substantially different soils, climate, and forest conditions. They also have different road building practices that are unique from how we design, build, and maintain roads in Montana.

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**COMMENT** – *"Overall, roads had a greater impact on landscape structure than logging in our study area. Indeed, the 3-fold increase in road density between 1950–1993 accounted for most of the changes in landscape configuration associated with mean patch size, edge density, and core area."*

*McGarigal, Kevin Ph.D., William H. Romme Ph.D., Michele Crist Ph.D. and Ed Roworth Ph.D. "Cumulative effects of roads and logging on landscape structure in the San Juan Mountains, Colorado (USA)" Landscape Ecology, Volume 16, Number 4 / May, 2001*

<http://www.springerlink.com/content/w12557624742tv77/>

**RESPONSE** - Relevant to this project; this reference talks about how not all sediment sources from roads can be avoidable. Road maintenance prior to project implementation will install new culverts and recondition existing culverts that will decrease the effects the existing roads have on the stream network. The DEIS acknowledges the effects roads can have on sediment production and includes maintenance measures prior to project implementation to reduce sediment in the project area.

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**COMMENT** – *"Road construction in remote areas appears to be the major long term impact of resource extraction industries and the most significant problem facing grizzly bears in most locations. Open roads are an influence in all 5 ways that people affect bears. Vehicles on roads can harass bears, displace them from quality habitats, and cause reduced bear use of altered habitats, such as cutting units. Bears that are displaced from roads may cause social disruption*

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*in areas away from roads. Finally, roads permit access for many people and some of these will shoot bears.” (Pg. 62)*

*McLellan, Bruce N. “Relationships between Human Industrial Activity and Grizzly Bears” Bears: Their Biology and Management, Vol. 8, International Conference on Bear Research and Management February 1989 (1990), pp. 57-64*

[http://www.bearbiology.com/fileadmin/tpl/Downloads/URSUS/Vol\\_8/McClellan\\_8.pdf](http://www.bearbiology.com/fileadmin/tpl/Downloads/URSUS/Vol_8/McClellan_8.pdf)

**RESPONSE** - The DEIS includes a complete analysis of potential impacts to grizzly bears (Chapter 3, Wildlife, pages 112-119). This analysis determined the proposed actions “may effect, but not adversely affect” the grizzly bear. This determination is based on (1) standards for core, TMRD, OMRD, HE, ORD are met, (2) sufficient displacement habitat is available, (3) no project activities would occur during the spring bear season (April 1 – June 15), and (4) no timber harvest related aerial activities would occur.

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**COMMENT** – *“Erosion from forest roads can be a large source of sediment in watersheds managed for timber production.”*

*Megahan, Walter F. Ph.D. “Predicting Road Surface Erosion from Forest Roads in Washington State” from a presentation presented at the 2003 Geological Society of America meeting.*

[http://qsa.confex.com/qsa/2003AM/finalprogram/abstract\\_67686.htm](http://qsa.confex.com/qsa/2003AM/finalprogram/abstract_67686.htm)

**RESPONSE** - Not relevant to this project; this reference material is discussing a model used to estimate sediment input associated with roads. Because the model was developed for roads in the Pacific Northwest it is not a good tool for this project.

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**COMMENT** – *“Today, addressing the adverse impacts of forest roads is consistently identified as one of the highest watershed restoration priorities in U.S. forests—in many forested watersheds in the western United States there is a greater road density than stream density. It is simply irrational to spend millions of dollars subsidizing further forest road construction when we are simultaneously spending millions of dollars to offset detrimental effects associated with similar actions in the past.”*

*Montgomery, David Ph.D., Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America’s Forests April 28, 1998, U.S. Capitol*

<http://www.saveamericasforests.org/news/ScientistsStatement.htm>

**RESPONSE** - Relevant to this project; this is another study that looks at the roads impact on the stream network. It also looks at the potential sedimentation associated with road segments. The analysis indicates road maintenance completed prior to timber hauling would substantially reduce the effects roads in the project area are currently having on sediment delivery as described in the DEIS. The DEIS acknowledges the effects roads can have on sediment production and includes maintenance measures to reduce erosion from the road surfaces in the project area prior to project implementation (see Chapter 2, pp. 13-14).

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**COMMENT** – *“Nothing is worse for sensitive wildlife than a road. Over the last few decades, studies in a variety of terrestrial and aquatic ecosystems have demonstrated that many of the most pervasive threats to biological diversity - habitat destruction and fragmentation, edge effects, exotic species invasions, pollution, and overhunting - are aggravated by roads. Roads have been implicated as mortality sinks for animals ranging from snakes to wolves; as displacement factors affecting animal distribution and movement patterns; as population fragmenting factors; as sources of sediments that clog streams and destroy fisheries; as sources of deleterious edge effects; and as access corridors that encourage development, logging and poaching of rare plants and animals.”*

Noss, Reed F., Ph.D. 1995. *“The Ecological Effects of Roads or the Road to Destruction”*, *Wildlands CPR*.

<http://www.wildlandscpr.org/ecological-effects-roads>

**RESPONSE** - Relevant to this project; many of the effects discussed in this paper are those associated with paved, well-maintained, high-speed roads. However, it is recognized that lower-standard, unpaved Forest roads have effects as well. The effects of displacement and avoidance were addressed in the Forest Plan and it provides wildlife secure habitat through management of open motorized road and trail densities.

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**COMMENT** – *Numerous studies have reported lower densities of breeding Ovenbirds (*Seiurus aurocapillus*) adjacent to forest edges.*

Ortega, Yvette K.; Capen, David E. 1999. *“Effects of forest, roads on habitat quality for Ovenbirds in a forested landscape”* *Auk*. 116(4): 937-946.

[http://www.fs.fed.us/rm/pubs\\_other/rmrs\\_1999\\_ortega\\_y001.html](http://www.fs.fed.us/rm/pubs_other/rmrs_1999_ortega_y001.html)

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**RESPONSE** – Any review or consideration of over birds would be irrelevant to the Pilgrim Creek Timber Sale proposal, as this geographic area is outside of the species’ range.

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**COMMENT** – *“Roads precipitate fragmentation by dissecting previously large patches into smaller ones, and in so doing they create edge habitat in patches along both sides of the road, potentially at the expense of interior habitat. As the density of roads in landscapes increases, these effects increase as well. McGurk and Fong (1995) considered the additive effects of clearcuts and roads, but did not measure the amount of associated edge habitat. Thus a more direct measurement of the impacts of roads on landscapes is needed.”*

*Reed, R.A., Johnson-Barnard, J., and Baker, W.A. 1996. "Contribution of Roads to Forest Fragmentation in the Rocky Mountains." Conservation Biology 10: 1098-1106.*

[http://cpluhna.nau.edu/Research/contribution\\_of\\_roads\\_to\\_forest\\_.htm](http://cpluhna.nau.edu/Research/contribution_of_roads_to_forest_.htm)

**RESPONSE** – This is a very general overview of how any edge fragmentation could possibly result in some measureable impact to wildlife in general. It is of interest, though so general in nature as to be of limited value in determining the effects related to the Pilgrim Creek Timber Sale.

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**COMMENT** – *“Erosion on roads is an important source of fine-grained sediment in streams draining logged basins of the Pacific Northwest. Runoff rates and sediment concentrations from 10 road segments subject to a variety of traffic levels were monitored to produce sediment rating curves and unit hydrographs for different use levels and types of surfaces.*

*Reid, L. M. Ph.D. and T. Dunne (1984), “Sediment Production from Forest Road Surfaces,” Water Resources. Res., 20(11), 1753–1761.*

<http://www.aqu.org/pubs/crossref/1984/WR020i011p01753.shtml>

**RESPONSE** - This study found that traffic level on gravel surfaced roads was the primary factor determining the amount of sediment produced from the road surface. Rainfall mobilized fines brought to the surface, delivering the fines to cross drain culverts. Study conducted in western Washington where annual precipitation during study averages greater than 150 inches. It is not considered representative of the Pilgrim Creek project area.

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**COMMENT** – *"Overland flow from the road surface is a very effective transport medium for the abundant fine sediments that usually are generated on road surfaces. Road drainage also can excavate gullies and cause landslides downslope in swales. Cut and fill slopes are often*

*susceptible to landsliding, and road-related landsliding is the most visible forestry-related erosional impact in many areas."*

*Reid, Leslie M. Ph.D., Robert R. Ziemer Ph.D., and Michael J. Furniss, 1994. "What do we know about Roads?" USDA Forest Service.*

<http://www.fs.fed.us/psw/publications/reid/4Roads.htm>

**RESPONSE** - Relevant to this project; this popular reference, which discusses the impacts roads can have on a variety of different resources and components of the stream ecosystems, is a good summary of what we know today. The findings and disclosures found in this reference have helped shape the proposed action with regard to the maintenance portion of the proposed action including the installation of new culverts and reconditioning of existing culverts which decreases the effects roads in the project area have on the stream network. No landslides were found in the project area.

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**COMMENT** – *Road construction and logging appear to have resulted in increases in average turbidity levels (as inferred from suspended sediment increases) above those permitted by Regional Water Quality Regulations."*

*Rice, Raymond M. Ph.D., Forest B. Tilley and Patricia A. Datzman. 1979. "Watershed's Response to Logging and Roads: South Fork of Caspar Creek, California, 1967-1976." USDA Forest Service, Research Paper PSW-146.*

<http://www.fs.fed.us/psw/publications/rice/Rice79.pdf>

**RESPONSE** - Not relevant to this project; this reference from the 1970s looked at a paired watershed comparison associated with logging activities that removed 65 percent of the stand volume in the Casper Creek Watershed in California. This reference does not represent the best science available and does not reflect forest practices used today especially as they relate to the proposed activity.

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**COMMENT** – *"Sediment eroded from gravel roads can be a major component of the sediment budget in streams in this region (Van Lear, et al, 1995)."*

*Riedel, Mark S. Ph.D. and James M. Vose Ph.D., "Forest Road Erosion, Sediment Transport and Model Validation in the Southern Appalachians." Presented at the Second Federal Interagency Hydrologic Modeling Conference, July 28 – August 1, 2002.*

[http://www.srs.fs.usda.gov/pubs/ja/ja\\_riedel002.pdf](http://www.srs.fs.usda.gov/pubs/ja/ja_riedel002.pdf)



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**RESPONSE** - Not relevant to this project; this reference from Georgia and Tennessee discusses different sediment sources associated with a watershed restoration planning. Although the landscape for this project in Montana is different than that of the southeastern U.S., the process used to develop this project is similar. The installation of new culverts and reconditioning of existing culverts will decrease the effects roads in the project area have on the stream network and sediment contributions.

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**COMMENT** – *Summaries of the effects of roads on wildlife habitats and biological systems in general have been compiled by Forman and Alexander (1998), Trombulak and Frissell (2000), Gucinski et al. (2001), Forman et al. (2003) and Gaines et al. (2003)."*

Rowland, M. M., M. J. Wisdom, B. K. Johnson, and M. A. Penninger 2005. "Effects of Roads on Elk: Implications for Management in Forested Ecosystems." Pages 42-52 in Wisdom, M. J., technical editor, *The Starkey Project: a synthesis of long-term studies of elk and mule deer* Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group.

[http://www.fs.fed.us/pnw/pubs/journals/pnw\\_2004\\_rowland001.pdf](http://www.fs.fed.us/pnw/pubs/journals/pnw_2004_rowland001.pdf)

**RESPONSE** - Relevant to this project; it is recognized that lower-standard, unpaved Forest roads have potential effects. The effects of displacement and avoidance were addressed in the Forest Plan and provides wildlife secure habitat through management of open motorized road and trail densities.

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**COMMENT** – *The consequences of road construction to wildlife are generally negative. Roads result in increased human access, habitat fragmentation, disturbance, and in some cases direct mortality due to vehicle collisions."*

Schwartz, Chuck Ph.D. - March 1998 "Wildlife and Roads" *The Interagency Forest Ecology Study Team (INFEST) newsletter*

<http://www.sf.adfg.state.ak.us/sarr/forestecology/fsroads.cfm>

**RESPONSE** - This article addresses road-related habitat issues in Alaska, and speaks specifically about effects to grizzly/brown bears. While the article itself does not apply specifically to the Pilgrim Creek project, it does list some of the impacts roads can have on wildlife in general. The article also states that "Big game (species) have been shown to avoid habitat adjacent to roads for up to ½ mile." Collision as a factor of road fragmentation typically is associated with larger high-speed highways, and as a result, does not apply to this project.

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**COMMENT** – *The importance of roads in altering basin hydrology has been underscored in paired-watershed studies and recent modeling studies.<sup>98</sup> “ (Pgs. 730 and 731)*

*Shanley, James B. and Beverley Wemple Ph.D. “Water Quantity and Quality in the Mountain Environment” Vermont Law Review, Vol. 26:717, 2002*

[http://www.uvm.edu/~bwemple/pubs/shanley\\_wemple\\_law.pdf](http://www.uvm.edu/~bwemple/pubs/shanley_wemple_law.pdf)

**RESPONSE** - Relevant to this project; this reference talks about hydrology in mountains in a general textbook approach discussing a number of accepted traits associated with hydrology. The excerpt deals with the effects forest roads can have on hydrology based on a few other cited sources. The DEIS fully acknowledges these effects and discussing them in detail in the hydrology resource report and the analysis in the DEIS. The road maintenance work that will be completed prior to project implementation addresses the most critical effects the road system is having on the project streams by installing new culverts and reconditioning existing culverts, which decrease the effects roads in the project area have on the stream network.

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**COMMENT** – *“Roads are often the major source of soil erosion from forested lands (Patric 1976).”*

*“Generally, soil loss is greatest during and immediately after construction.”*

*Swift Jr., L. W. “Soil losses from roadbeds and cut and fill slopes in the Southern Appalachian Mountains.” Southern Journal of Applied Forestry 8: 209-216. 1984.*

<http://cwt33.ecology.uga.edu/publications/403.pdf>

**RESPONSE** - The DEIS includes a comprehensive analysis of potential impacts to soils (Chapter 3, pages 232-261). Concepts and findings of the paper are compatible with the analysis.

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**COMMENT** – *Small forests with large amounts of edge habitat are a hostile landscape for nesting neotropical migratory songbirds. In these areas, songbirds face two great threats: 1) the loss of eggs and nestlings to predators and, 2) parasitism by cowbirds.”*

*Switalski, Adam “Where Have All the Songbirds Gone? Roads, Fragmentation, and the Decline of Neotropical Migratory Songbirds” Wildlands CPR, September 8, 2003*

<http://www.wildlandscpr.org/node/213>

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**RESPONSE** - The Wildlife section of the EA includes findings related to migratory birds (EA, Chapter 3, page 130). It is determined that the proposed actions would not impact migratory birds.

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**COMMENT** – *Our review underscores the importance to conservation of avoiding construction of new roads in roadless or sparsely roaded areas and of removal or restoration of existing roads to benefit both terrestrial and aquatic biota.”*

*Trombulak, Stephen C. Ph.D. and Christopher A. Frissell Ph.D. “Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities” Conservation Biology, Volume 14, No. 1, Pages 18–30, February 2000*

<http://www.transwildalliance.org/resources/200922144524.pdf>

**RESPONSE** - Relevant to this project; the citation is a general synthesis of some of the deleterious effects of roads on the natural environment. It is very broad based and while some of it pertains to conditions in the project area, it contains no specific information that can be used in the analysis. The DEIS recognizes some of these effects and in the case of aquatics, attempts to reduce the sediment-related effects project area roads have on stream channels by implementing BMPs.

Roads do obviously compact soil; however, authorized Forest roads as defined in 36 CFR 212.1 are not considered part of the productive land base. It is recognized that roads have the potential for effect to wildlife including lower standard, unpaved Forest roads. The effects of displacement and avoidance were addressed in the Forest Plan and it provides wildlife secure habitat through management of open motorized road and trail densities.

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**COMMENT** – *Roads are a major contributor to habitat fragmentation because they divide large landscapes into smaller patches and convert interior habitat into edge habitat.*

*Watson, Mark L. "Habitat Fragmentation and the Effects of Roads on Wildlife and Habitats." Background and Literature Review 2005.*

[http://www.wildlife.state.nm.us/conservation/habitat\\_handbook/documents/2004EffectsofRoadsonWildlifeandHabitats.pdf](http://www.wildlife.state.nm.us/conservation/habitat_handbook/documents/2004EffectsofRoadsonWildlifeandHabitats.pdf)

**RESPONSE** - Relevant to this project; this paper includes a list of potential effects of roads and highways. It also includes an appendix with a literature review of road effects to wildlife and habitats, with the literature cited following it. The quoted section above lists potential effects of roads. It is recognized that lower-standard, unpaved Forest roads have potential effects. The effects of displacement and avoidance were addressed in the Plan and provides wildlife secure habitat through management of open motorized road and trail densities.

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**COMMENT** – *An additional, indirect effect of roads is that road avoidance leads to underutilization of habitats that are otherwise high quality."*

Wisdom, Michael J., Richard S. Holthausen Ph.D., Barbara C. Wales Ph.D., Christina D. Hargis Ph.D., Victoria A. Saab Ph.D., Danny C. Lee Ph.D., Wendel J. Hann Ph.D. Terrell D. Rich, Mary M. Rowland, Wally J. Murphy, and Michelle R. Eames, "Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad-Scale Trends and Management Implications Volume 2 – Group Level Results." USDA Forest Service, PNW-GTR-485, May 2000.

[http://maps.wildrockies.org/ecosystem\\_defense/Science\\_Documents/Wisdom\\_et\\_al\\_2000/Vol\\_2a.pdf](http://maps.wildrockies.org/ecosystem_defense/Science_Documents/Wisdom_et_al_2000/Vol_2a.pdf)

**RESPONSE** - Relevant to this project; it is recognized that lower-standard, unpaved Forest roads have potential effects. The effects of displacement and avoidance were addressed in the Forest Plan and provides wildlife secure habitat through management of open motorized road and trail densities.

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**COMMENT** – *Most of these adverse effects are persistent and will not recover or reverse without human intervention. The techniques for road remediation are well established, agreed upon and readily available. (Weaver et al. 2006)."* (Pg. 2)

Wright, Bronwen, Policy Analyst and Attorney Pacific Rivers Council Excerpt from a May 11, 2009 letter to the Rogue River-Siskiyou National Forest Travel Management Team

<http://www.pacificrivers.org/protection-defense/comment-letters/Rogue%20River%20Siskiyou%20TMP%20DEIS.pdf>

**RESPONSE** - Relevant to this project; the citation is a comment letter to the FS on travel management in the Oregon Cascade Mountains - a very different climate and setting than the northern Rockies. The letter cites other literature that discusses the adverse effects of roads on aquatic environments. The DEIS describes the existing condition of haul route roads and the impact they're having on adjacent streams. It also analyzes the effect, on sediment reduction, of proposed road improvements.

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**COMMENT** – *"Fires do not leave a large road network in place (assuming the blaze was not suppressed otherwise there may be dozer lines, etc.). Logging creates roads that fragment habitat and generally increase human access, both of which affect the use of the land by wildlife. Moreover, roads and logging equipment can become vectors for the dispersal of weeds."*

Wuerthner, George 2008 "Ecological Differences between Logging and Wildfire"

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<http://wuerthner.blogspot.com/2008/12/ecological-differences-between-logging.html>

**RESPONSE** – Irrelevant to the decision to be made; opinion from a personal web log.

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**COMMENT** – *“Forest fragmentation occurs when large, contiguous blocks of forest are broken up into isolated islands by development, roads, or clearing for agriculture. Just as inbreeding among the royal families of Europe spread hemophilia, forest fragmentation negatively impacts the long term sustainability of both plant and animal communities. Geographic isolation results in inbreeding and diminishes biodiversity.”*

*Zimmerman, E.A. and P.F. Wilbur “A Forest Divided” New Roxbury Land Trust newsletter, 2004*

<http://www.ourbetternature.org/forestfrag.htm>

**RESPONSE** – Road-related impacts listed by the article include habitat fragmentation, inbreeding and diminished biodiversity stemming from isolation of populations, road-kill, and increased predation of woodland birds. It is not applicable to the Pilgrim Creek Timber Sale project.

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**FROM DICK ARTLEY** – Titled “attachment 5 insects beneficial”.

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**COMMENT** - *What may be undesirable to forest managers emphasizing timber production may well be desirable to others interested primarily in wildlife habitat or biodiversity, and vice versa.”*

*Barnard, E. L. Ph.D. “Forest Health Fundamentals” from Forest Management, 2004*

[http://www.fl-dof.com/forest\\_management/fh\\_fundamentals.html](http://www.fl-dof.com/forest_management/fh_fundamentals.html)

**RESPONSE** – This is a brochure from the Florida Division of Forestry, intended as a basic introduction to certain forestry practices. Though of interest, it is too general in nature to be of value in identifying and quantifying any potential environmental impacts related to the proposed actions.

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**COMMENT** - *Bush's "Forest Health" initiative will only exacerbate the negative situation. These forests are still extensive and large enough that letting them be is the best forest health prescription.”*

*Barry, Glen Ph.D. “Insect Attacks May Benefit Colorado Forests” Forests.org, January 29, 2004*

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<http://forests.org/blog/2004/01/insect-attacks-may-benefit-col.asp>

**RESPONSE** – Conjecture and not supported by science. No response is warranted.

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**COMMENT** - *The potentially significant direct, indirect, and cumulative impacts upon insects and upon the niche of insects in the BHNH forest ecosystem should be thoroughly analyzed in the FEIS."*

*Black, Scott Hoffman Ph.D., Entomologist/Ecologist and Executive Director The Xerces Society  
Excerpt from a 2008 comment letter to Alice Allen Hell Canyon Ranger District Black Hills  
National Forest*

[http://www.xerces.org/wp-content/uploads/2008/09/black\\_hills\\_comments.pdf](http://www.xerces.org/wp-content/uploads/2008/09/black_hills_comments.pdf)

**RESPONSE** – This letter is site-specific pertaining to a project in South Dakota, expressing concerns about local species of plants. It is irrelevant to the Pilgrim Creek Timber Sale proposal.

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**COMMENT** - *Some foresters believe the solution to the problem is increased logging. A review of over three hundred papers on the subject reveals that there is little or no evidence to support this assumption. There is an urgent need for federal and state agencies and land managers to reevaluate their current strategy for managing forest insects—which often relies on intensive logging—and to adopt a perspective that manages for forest ecosystem integrity."*

*Black, Scott Hoffman Ph.D., Entomologist/Ecologist and Executive Director, The Xerces Society for Invertebrate Conservation 2005 "Logging to Control Insects: The Science and Myths Behind Managing Forest Insect 'Pests'"*

<http://www.xerces.org/guidelines-logging-to-control-insects/>

**RESPONSE** – Too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *These forests may look different to us, but beetle-affected forests are still functioning ecosystems that provide food and shelter for animals, cool clear water for fish and humans, and irreplaceable refuges for wildlife from the effects of logging, road building and climate change." (Pp 23 and 24)*

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*Black, S. H. Ph.D., D. Kulakowski Ph.D., B.R. Noon Ph.D., and D. DellaSala Ph.D. 2010. "Insects and Roadless Forests: A Scientific Review of Causes, Consequences and Management Alternatives." National Center for Conservation Science & Policy, Ashland OR.*

<http://nccsp.org/files/Insect%20and%20Roadless%20Forests.pdf>

**RESPONSE** – Too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *It may be said that the standards by which we measure forest health are determined by the objectives we aspire to. Forests managed for maximum timber yield will require different criteria for judging forest health than those managed for old-growth forest purposes. Likewise, the health of forests adjacent to or in urban communities will be judged with criteria that are quite different from those used to judge forests in rural areas where population densities are quite low."*

*Board on Agriculture. 1998 "Forested Landscapes in Perspective: Prospects and Opportunities for Sustainable Management of America's Nonfederal Forests"*

[http://books.nap.edu/openbook.php?record\\_id=5492&page=205](http://books.nap.edu/openbook.php?record_id=5492&page=205)

**RESPONSE** – Too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *Television commercials tell us that the only good bug is a dead bug. But stop a moment and think about all the important jobs insects do: they pollinate plants including trees, provide food for fish, birds, and other creatures, help decompose dead material, and make nutrients available to the forest. Insects keep our forests healthy."*

*Calvert, Jeffrey Ph.D. "A healthy forest needs bugs" California Forest Stewardship Program, 2002*

<http://ceres.ca.gov/foreststeward/html/bugs.html>

**RESPONSE** – Too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *Current mountain pine beetle management fails to adequately ensure that ecological values are protected. The current legal framework allows 'emergency' exemptions from block-size requirements, terrain stability assessments, adjacency constraints and public*

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*review periods for operational plans. 'Emergency' logging may also occur in Old Growth Management Areas, Wildlife Habitat Areas, riparian reserves, Wildlife Tree Patches, Forest Ecosystem Networks, ungulate winter ranges, thus affecting the implementation of higher level planning, e.g., Land and Resource Management Plans."*

*Drever, Ronnie Ph.D. and Josie Hughes 2001 "Salvaging Solutions: Science-based management of BC's pine beetle outbreak" A report commissioned by the David Suzuki Foundation, Forest Watch of British Columbia (a project of the Sierra Legal Defence Fund), and Canadian Parks and Wilderness Society – B.C. Chapter*

[http://www.davidsuzuki.org/files/Pine\\_beetle.final\\_w=cover2.pdf](http://www.davidsuzuki.org/files/Pine_beetle.final_w=cover2.pdf)

**RESPONSE** – Too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *The number of beneficial or non-harmful insect species in a forest is large. They play many essential roles within the forest ecosystem."*

*"Forest Protection – Insects" Canfor Corporation, 2007*

<http://www.canfor.com/treeschool/library/files/insects.asp>

**RESPONSE** – Too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *While the pine beetle's power to destroy has been well-documented, it may also have the power to heal. Currie's research discovered the insect is associated with a bacterium containing an antibiotic compound that could eventually lead to new life-saving medicines." (Pg. 9)*

*Gerein, Keith "Notorious pine beetle may be misunderstood" The Edmonton Journal, March 21, 2009*

[http://www.chetwyndecho.net/Issues/Issue\\_13\\_March\\_27\\_2009IWORK\\_-\\_website\\_PDF.pdf/](http://www.chetwyndecho.net/Issues/Issue_13_March_27_2009IWORK_-_website_PDF.pdf/)

**RESPONSE** – Too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *Although healthy trees are prerequisite to healthy forest ecosystems, health encompasses much more than trees, and forest health correlates much more closely with structure and processes than with how fast trees are growing."*

*Perry, David A. Ph. D., Testimony at a Senate Field Hearing on Forest Health August 29, 1994*

[http://www.subtleenergies.com/ormus/Fire/D\\_PERRY.htm](http://www.subtleenergies.com/ormus/Fire/D_PERRY.htm)

**RESPONSE** – Too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *Something has to establish a balance between the available water, nutrients and the demands of plants. We finally came to realize that fire was a big part of that. Now we need to change our view of insects, because they too play a major role."*

*Schowalter, Tim Ph.D., "Insect epidemics a natural path to forest health?" 27-May-1997, OSU News*

<http://oregonstate.edu/dept/ncs/newsarch/1997/May97/goodbugs.htm>

**RESPONSE** – Too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *Native insects and diseases are intrinsic and necessary components of most terrestrial ecosystems. These and other natural disturbances, such as fire, are the drivers of forest diversity, structure, and function. Although at times devastating to the forest, they are necessary for the sustainability of forests (Aber and Melillo 1991, Attiwill 1994). Insects and diseases do cause economic harm. For the period 1982-1987, losses due to insects and diseases in Canada were estimated at over 100 million m<sup>3</sup> annually or one third of the annual harvest (Hall and Moody 1994). Forest managers must balance volume loss without interfering with the necessary ecological functions that these agents provide to sustain a healthy forest."*

*"Native Forest Insects and Diseases" A publication of the Canadian Forest Service, 2003*

[http://www.health.cfs.nrcan.gc.ca/BorealShield/nativeInsectsAndDiseases\\_e.html](http://www.health.cfs.nrcan.gc.ca/BorealShield/nativeInsectsAndDiseases_e.html)

**RESPONSE** – This internet site is unavailable and the citation can not be located. Regardless, it is considered too general in nature to be of value in understanding the potential environmental effects related to proposed actions in the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *Even when all of the trees are killed, as in a severe forest fire, the result usually is stand regeneration, as described above for lodgepole pine. Thus, from a purely ecological standpoint, dead and dying trees do not necessarily represent poor "forest health." They may instead reflect a natural process of forest renewal.*" (pg.11)

Romme, W.H., J. Clement, J. Hicke, D. Kulakowski Ph.D., L.H. MacDonald, T.L. Schoennagel Ph.D., and T.T. Veblen. 2006 "Recent Forest Insect Outbreaks and Fire Risk in Colorado Forests: A Brief Synthesis of Relevant Research"

[http://www.cfri.colostate.edu/docs/cfri\\_insect.pdf](http://www.cfri.colostate.edu/docs/cfri_insect.pdf)

**RESPONSE** – The relationship between insect outbreaks and fire danger is irrelevant to the decisions to be made.

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**COMMENT** - *'The traditional view still is that forest insects are destructive, but we need a revolution in this way of thinking. The fact is we will never resolve our problems with catastrophic fires or insect epidemics until we restore forest health, and in this battle insects may well be our ally, not our enemy.'* "

*View of forest insects changing from pests to partners, Bio-Medicine.org, 2001*

<http://news.bio-medicine.org/biology-news-2/View-of-forest-insects-changing-from-pests-to-partners-8940-1/>

*Science Blog*

<http://www.scienceblog.com/community/older/2001/C/200113890.html>

**RESPONSE** – This is a very general overview of the ecological role of forest insects. The general nature of the document results in it being of limited value in determining site-specific environmental impacts related to the proposed actions.

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**COMMENT** - *Large-scale efforts for beetle control are economically and ecologically expensive, and the uncertain benefits of control efforts should be weighed carefully against their costs (Hughes and Drever 2001). Former U.S. Forest Service Chief Jack Ward Thomas, in testimony before the U.S. Senate Subcommittee on Agricultural Research, Conservation, Forestry, and General Legislation on August 29, 1994, acknowledged that "the Forest Service logs in insect-*

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*infested stands not to protect the ecology of the area, but to remove trees before their timber commodity value is reduced by the insects."*

*Black, S.H. Ph.D. 2005. Logging to Control Insects: The Science and Myths Behind Managing Forest Insect "Pests." A Synthesis of Independently Reviewed Research. The Xerces Society for Invertebrate Conservation, Portland, OR.*

[http://www.xerces.org/wp-content/uploads/2008/10/logging\\_to\\_control\\_insects.pdf](http://www.xerces.org/wp-content/uploads/2008/10/logging_to_control_insects.pdf)

**RESPONSE** – This is a general review of literature pertaining to forest insects. While useful in a general way, it is of limited value in defining potential impacts from the proposed actions. More salient, site-specific research is referenced for this effort.

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**COMMENT** - *A widespread low-severity fire in subalpine forests in the White River National Forest, Colorado did not burn any beetle-affected stands [13]. Further, Bebi et al. [12] found that stands of Engelmann spruce (Picea engelmannii) and subalpine fir (A. lasiocarpa) in the White River National Forest influenced by a spruce beetle outbreak in the 1940s did not show higher susceptibility to 303 subsequent forest fires that burned after 1950." (Pgs. 45 and 46)*

*Bond, Monica L., Derek E. Lee, Curtis M. Bradley and Chad T. Hanson Ph.D. "Influence of Pre-Fire Tree Mortality on Fire Severity in Conifer Forests of the San Bernardino Mountains, California" The Open Forest Science Journal, 2009, 2, 41-47*

[http://www.biologicaldiversity.org/publications/papers/Bond\\_et\\_al.pdf](http://www.biologicaldiversity.org/publications/papers/Bond_et_al.pdf)

**RESPONSE** –This paper discusses the influence of pre-fire dead and dying trees on fire behavior, and is irrelevant to the decisions to be made.

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**COMMENT** - *A new study in the lodgepole pine forests of the greater Yellowstone region concludes that rather than increasing the wildfire risk, beetle attacks reduce it by thinning tree crowns."*

*"The researchers used satellite imagery to map lodgepole stands attacked by mountain pine beetles, a type of bark beetle, then hiked into the areas to confirm the beetle damage and measure fuel loads. Then they ran computer models to predict fire behavior."*

*Boxall, Bettina "Bark beetles may kill trees, but that may not raise fire risk" Los Angeles Times, September 26, 2010*

<http://articles.latimes.com/2010/sep/26/nation/la-na-beetle-fire-20100926>

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**RESPONSE** – Whether or not dead trees in a stand prior to a fire have any influence on fire behavior is not relevant to the decisions to be made.

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**COMMENT** - *We're certainly not arguing against cutting down some of these trees, but we think that the cutting effort needs to be focused around communities and homes," Noon said. "It makes little sense to have wide-scale cutting of these trees."*

*Frey, David "Logging Won't Halt Beetles, Fire, Report Says" NewWest Travel and Outdoors, 3/03/10*

[http://www.newwest.net/topic/article/logging\\_wont\\_halt\\_beetles\\_fire\\_report\\_says/C41/L41/](http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/)

**RESPONSE** – This paper addresses the efficacy of fuel treatment specifically in terms of protecting structures. This is irrelevant to the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *Despite nearly 100 years of active forest management to control the mountain pine beetle, there is very little evidence to suggest that logging is effective, especially once a large-scale insect infestation has started," Black said. Black noted that even logging dead trees could make things worse from an ecological standpoint, since their removal eliminates habitat for parasites and insect predators. Logging can also seriously damage soil and roots, leading to greater stress on remaining trees and increasing their susceptibility to outbreaks."*

*Gable, Eryn "Battling beetles may not reduce fire risks – report" Land Letter, March 4, 2010*

<http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/>

**RESPONSE** – As in above, this paper addresses the efficacy of fuel treatment specifically in terms of protecting structures. This is irrelevant to the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *Although ongoing outbreaks understandably have led to widespread public concern about increased fire risk, the best available science indicates that outbreaks of mountain pine beetle and spruce beetle do not lead to an increased risk of fire in the vast majority of forests that are currently being affected. We should not let the effects of bark beetle outbreaks, as spectacular as they may be, distract us from the real risk. The real concern is that we have built homes, communities, ski resorts, and other infrastructure in inherently flammable ecosystems. The ongoing outbreaks have not increased the risk of wildfire as much as they have drawn attention to the risk that has been there long before the outbreaks began. Forests of lodgepole*

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*pine and spruce-fir are prone to high-severity fires during drought conditions, regardless of the influence of bark beetle outbreaks.” (Pg. 5)*

*Kulakowski, Dominik Ph.D., Assistant Professor, Clark University, Testimony before the Subcommittee on Public Lands ,and Forests of the Energy and Natural Resources Committee of the United States Senate, April 21, 2010*

[http://energy.senate.gov/public/\\_files/KulakowskitestimonyonS2798042110.pdf](http://energy.senate.gov/public/_files/KulakowskitestimonyonS2798042110.pdf)

**RESPONSE** – This paper addresses the efficacy of fuel treatment specifically in terms of protecting structures. This is irrelevant to the Pilgrim Creek Timber Sale analysis.

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**COMMENT** - *Some pines species, such as lodgepole pine, are maintained by periodic disturbances. The lodgepole pine forest-type1 typically is an essential monoculture of even-aged trees that were initiated by a catastrophic, stand-replacing fire. Without the influence of fire (Fig. 1B), lodgepole pine would be lost over much of its native range (Brown 1975, Lotan et al. 1985). Fire serves to prepare the seedbed, releases seeds from the serotinous cones (triggered to release seeds by heat of a fire), and eliminates more shade-tolerant species such as spruce or fir that would eventually out-compete and replace the early seral lodgepole pine.”*

*Logan, Jesse A. Ph.D. and James A. Powell Ph.D. Ghost Forests, Global Warming and the Mountain Pine Beetle (Coleoptera: Scolytidae) AMERICAN ENTOMOLOGIST • Fall 2001*

[http://www.usu.edu/beetle/documents/Logan\\_Powell01.pdf](http://www.usu.edu/beetle/documents/Logan_Powell01.pdf)

**RESPONSE** – this is a basic ecological review of lodgepole pine ecosystems and is too general to be of value in determining potential environmental impacts of the proposed actions.

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**COMMENT** - Wyoming can't afford to let those fears result in wasting millions of state and federal dollars fighting the epidemic and letting industry rush to chop down dead trees. Wyoming's best chance to make wise, informed decisions is to follow the science, and be willing to be nimble as data and test results change.”

“Science should lead pine beetle epidemic solutions” Star-Tribune Editorial Board, Wyoming Star Tribune, October 3, 2010

[http://trib.com/news/opinion/editorial/article\\_f87d7db9-ed2a-5620-8d66-20556935c592.html](http://trib.com/news/opinion/editorial/article_f87d7db9-ed2a-5620-8d66-20556935c592.html)

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**RESPONSE** – This opinion article argues that the perspective on understanding and responding to the current epidemic of bark beetles in that region should be based on a balanced view in consideration of both science and politics. While of interest, this thesis is too general and philosophical to be of much value in determining the potential environmental impacts related to the proposed actions.

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**COMMENT** - *Second, when beetles kill a lodgepole pine tree, the needles begin to fall off and decompose on the forest floor relatively quickly. In a sense, the beetles are thinning the forest, and the naked trees left behind are essentially akin to large fire logs. However, just as you can't start a fire in a fireplace with just large logs and no kindling, wildfires are less likely to ignite and carry in a forest of dead tree trunks and low needle litter. "*

[Shoemaker, Jennifer, NASA Goddard Space Flight Center](#)

**"Landsat Reveal Surprising Connection Between Beetle Attacks, Wildfire", posted at the NASA WEB site, Sep. 8, 2010**

[http://landsat.gsfc.nasa.gov/news/news-archive/sci\\_0031.html](http://landsat.gsfc.nasa.gov/news/news-archive/sci_0031.html)

**RESPONSE** – Whether or not dead trees in a stand prior to a fire have any influence on fire behavior is not relevant to the decisions to be made.

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**COMMENT** - *(1) Our findings suggest that mountain pine beetle infestation in lodgepole pine does not increase the subsequent risk of active crown fire, and that fire does not necessarily cause an epidemic of mountain pine beetle in nearby lodgepole pine." (Pg. 37)*

*"(3) Even within high-severity bark beetle infestations, all lodgepole pine trees were not killed. These forests generally remain well stocked, with density of young trees sufficient to replace individuals lost during the current epidemic." (Pg. 38)*

*"(5) Our findings support the need for forest managers to take a long-term and broad-scale view of timber and disturbance dynamics." (Pg. 38)*

*"(6) Because climate drivers are so important for both fire and insect disturbances, forest managers may be very limited in their ability to change or stop these disturbances." (Pg. 39)*

*Tinker, Daniel B. Ph.D. et al., 2010 "Reciprocal interactions between bark beetles and wildfire in subalpine forests: landscape patterns and the risk of high-severity fire" A research paper sponsored in part by the Joint Fire Science Program*



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[http://landscape.zoology.wisc.edu/October%202009%20updates/JFSP\\_FnlRep\\_30Sept2009.pdf](http://landscape.zoology.wisc.edu/October%202009%20updates/JFSP_FnlRep_30Sept2009.pdf)

**RESPONSE** – Whether or not dead trees in a stand prior to a fire have any influence on fire behavior is not relevant to the decisions to be made.

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**COMMENT** - *While it may seem intuitive that dead trees will lead to more fires, there is little scientific evidence to support the contention that beetle-killed trees substantially increase risk of large blazes. In fact, there is evidence to suggest otherwise."*

*Wuerthner, George, Pine Beetle Fears Misplaced, Helena Independent Record, March 25, 2010*

[http://helenair.com/news/opinion/article\\_f3d671f0-37c9-11df-921d-001cc4c002e0.html](http://helenair.com/news/opinion/article_f3d671f0-37c9-11df-921d-001cc4c002e0.html)

**RESPONSE** – Whether or not dead trees in a stand prior to a fire have any influence on fire behavior is not relevant to the decisions to be made.

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**FROM DICK ARTLEY – Titled "attachment 14 dead dying trees beneficial"**

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**COMMENT** - *"Intensified forest management, responding to the ever-increasing demand for forest products, will have a strong influence on the amount and distribution of woody material that remains as wildlife habitat through present and future stand rotations. Leaving the perpetuation of large down material to chance will probably result in its disappearance from the managed forests of the future, along with the loss of dependent plant and wildlife species."*

*Bartels, Ronald, John D. Dell, Richard L. Knight Ph.D. and Gail Schaefer, "Dead and Down Woody Material" Animal Inn*

[http://www.fs.fed.us/r6/nr/wildlife/animalinn/hab\\_8ddwm.htm](http://www.fs.fed.us/r6/nr/wildlife/animalinn/hab_8ddwm.htm)

**RESPONSE** – The beneficial role of dying and dead wood in forested ecosystems is recognized. This link connects to Region 6 internet site and the referenced document cannot be located.

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**COMMENT** - *"So you have to ask yourself, what's the point? That is the Vietnam approach to forestry — kill all the trees so you can 'save' them," Wuerthner wrote, adding that logging isn't benign and is expensive. "So you further have to ask whether the costs in terms of ecosystem impacts (the spread of weeds on logging roads for instance) are worth the presumed benefits." "*

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Byron, Eve *“Wuerthner to speak on forest ecology and value of dead trees”* Published in the Helena Independent Record, November 17, 2009

[http://www.helenair.com/news/local/article\\_7cac58d2-d339-11de-abfc-001cc4c002e0.html](http://www.helenair.com/news/local/article_7cac58d2-d339-11de-abfc-001cc4c002e0.html)

**RESPONSE** – Quote from newspaper article announcing an upcoming speaker. Irrelevant to the decisions to be made.

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**COMMENT** - *“When many of us think of a healthy forest, we think of tall, green trees. It’s hard to imagine how a tree killed by mountain pine beetle could be good for a forest. However, to be truly healthy and support all the wildlife that depends on it, there must be a variety of young, old and dead trees in a forest ecosystem. At “endemic” or normal levels, mountain pine beetles help maintain this diversity by colonizing and killing old or damaged trees, therefore kick-starting the invaluable process of decomposition. Decomposing wood returns nutrients to the system while providing shelter and food for many plants and animals. Standing dead trees host a diversity of organisms that would not be present without them.”*

*“Dead Trees are Good Homes”* Parks Canada, 2009

<http://www.pc.gc.ca/eng/docs/v-q/dpp-mpb/sec1/dpp-mpb1b.aspx>

**RESPONSE** – This citation is a Parks Canada brochure. Too generic to be of value in determining environmental impacts of proposed forest management activities. Irrelevant.

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**COMMENT** - *Things are not always what they seem. At first glance a dead or dying tree seems like a tragic loss of a valuable resource. But on further inspection it becomes clear that a dead tree is simply a part of nature. And as a part of nature it serves an important purpose that isn't always obvious to us.*

*Dead trees and dead parts of trees are critically important to birds and mammals for nesting, rearing of young, feeding and as shelter. With a little forethought and tolerance we can maintain our organized, structured lifestyle and at the same time provide wildlife the habitat it needs to survive. In the long run, we'll be the better for it.”*

Kreil, Randy *“Bare Trees”* North Dakota Outdoors, March 1994

<http://www.und.nodak.edu/org/ndwild/oldtree.html>

**RESPONSE** – Opinion piece; too generic to be of value in determining environmental impacts of proposed forest management activities. This citation is irrelevant to the decisions to be made.

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**COMMENT-** *“Forest biologists such as Herbert Kronzucker, Ph.D., point out that dead and dying trees sustain the coming generations, are not a hazard, and are essential to the health of the forest.” Alaskan fire management official John LeClair has noted that dead trees left standing, rather than increasing the hazard of fires, burned more slowly, retarding the conflagration in contrast to the "explosive inferno" when a live tree full of inflammable resins caught fire.”*

Miller, Edward W. *“Savage or Salvage Logging?”* The Coastal Post - September, 1998

<http://www.coastalpost.com/98/9/13.htm>

**RESPONSE** – Opinion piece; too generic to be of value in determining environmental impacts of proposed forest management activities. This citation is irrelevant to the decisions to be made.

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**COMMENT** - *When one walks through the rather dull and tidy woodlands--say in the managed portions of the New Forest in Hampshire [England]-that result from modern forestry practices, it is difficult to believe that dying and dead wood provides one of the two or three greatest resources for animal species in a natural forest, and that if fallen timber and slightly decayed trees are removed the whole system is gravely impoverished of perhaps more than a fifth of its fauna.”*

Maser, Chris Ralph, G. Anderson, Kermit Cromack, Jr. Ph.D, Jerry T. Williams and Robert E. Martin, Ph.D. *“Dead and Down Woody Material”* From *Wildlife Habitats in Managed Forests the Blue Mountains of Oregon and Washington*

[http://www.fs.fed.us/r6/nr/wildlife/animalinn/hab\\_6ddwm.htm](http://www.fs.fed.us/r6/nr/wildlife/animalinn/hab_6ddwm.htm)

**RESPONSE** – The beneficial role of dying and dead wood in forested ecosystems is recognized. This link connects to Region 6 internet site and the referenced document cannot be located.

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**COMMENT** - *“The majority of wildlife species that use cavities cannot excavate their own holes and rely on those created by primary cavity users or on holes that form naturally. This group is called secondary cavity users. The kestrel, some owls such as the saw-whet and barred owls, ducks such as the common goldeneye and wood duck, and songbirds like the eastern bluebird, great-crowned flycatcher and white-breasted nuthatch are all secondary cavity users. Many mammals are in this category too. These include deer mice, red squirrels, grey squirrels, flying squirrels, weasels, martens, fishers, raccoons, porcupines and black bears.”*

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Naylor, Brian, Ph.D. *“Cavity Trees – Nature’s Refuge”* The Ontario Woodlot Association Newsletter, Winter / Spring 2006, Vol. 42

[http://www.ontariowoodlot.com/pages\\_pdf\\_new/cavitytree\\_S&W.pdf](http://www.ontariowoodlot.com/pages_pdf_new/cavitytree_S&W.pdf)

**RESPONSE** – Opinion piece; too generic to be of value in determining environmental impacts of proposed forest management activities. This citation is irrelevant to the decisions to be made.

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**COMMENT** - *“Removal of dead old trees (either standing or on the ground) results in the loss of important habitat such as hollows and decaying wood (Gibbons & Lindenmayer 2002) for a wide variety of vertebrates, invertebrates and microbial species and may adversely affect the following threatened species: Broad-headed Snake, Orange-bellied Parrot, Regent Parrot (eastern subspecies), Five-clawed Worm-skink, Nurus atlas, Nurus brevis, Meridolum corneovirens, Pale-headed Snake, Stephens' Banded Snake, Rosenberg's Goanna, Pink Cockatoo, Red-tailed Black-cockatoo, Glossy Black-cockatoo, Turquoise Parrot, Scarlet-chested Parrot, Barking Owl, Superb Parrot, Masked Owl, Hoary Wattled Bat, Spotted-tailed Quoll, Eastern False Pipistrelle, Eastern Freetail-bat, Squirrel Glider, Brush-tailed Phascogale, Glandular Frog, Red-crowned Toadlet, Brown Treecreeper (eastern subspecies).”*

*“Removal of dead wood and dead trees was listed as a KEY THREATENING PROCESS” Schedule 3 of the Threatened Species Conservation Act 1995 [12 December 2003].*

[http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/threat\\_profile.aspx?id=20011](http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/threat_profile.aspx?id=20011)

**RESPONSE** – This citation is from the government of New South Wales web site on indigenous species, and is irrelevant to the Pilgrim Creek project.

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**COMMENT** - *Logs provide other important ecological functions as well. Decaying logs retain moisture and nutrients that aid in new plant growth. Young trees may sprout from a single downed limb known as a nurse log. The soft wood tissue of a nurse log offers an ideal substrate for many young trees during their initial growth and development. Logs also store energy and fix nitrogen. Furthermore, dead wood serves as a ground cover, lessening soil erosion and preventing animals such as deer from over-browsing plant seedlings.”*

Santiago, Melissa J. and Amanda D. Rodewald, Ph.D., *“Dead Trees as Resources for Forest Wildlife”* Ohio State University Extension Fact Sheet

<http://ohioline.osu.edu/w-fact/0018.html>

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**RESPONSE** – This citation is a public information site from Ohio State University. It offers basic information regarding retention of woody material on forested sites. It is irrelevant to the Pilgrim Creek project.

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**COMMENT** - *“Wildlife trees (dead or dying trees used for nesting, feeding, denning and roosting) go through several stages that can start with ants tunneling into the rotting centre to flycatchers perching on the bare branches. For cavity-nesting birds they are critical habitat. Some species excavate cavities for their nests, while others take over and enlarge existing holes. Many of these birds in turn help the forest, eating insects which can damage trees.”*

Schneider, Gary, *“Dead Trees (they’re still full of life)”* The Macphail Woods Ecological Forestry Project, December 2008

<http://www.macphailwoods.org/wildlife/deadtrees.html>

**RESPONSE** – This is a basic overview of forest ecology and the role of dead trees and other woody material. It is general in nature, and of limited value in defining potential environmental impacts related to the proposed actions.

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**COMMENT** - *“Twenty years after publication of a report on wildlife habitat in managed east-side forests, Pacific Northwest Research Station scientists Evelyn Bull, Catherine Parks, and Torolf Torgersen, are updating that report and discovering that the current direction for providing wildlife habitat on public forest lands does not reflect findings from research since 1979. More snags and dead wood structures are required for foraging, denning, nesting, and roosting than previously thought. In this issue of Science Findings, Bull, Parks, and Torgersen, share their latest findings, which include the fact that snags and logs are colonized by organisms representing a broader array of plants, invertebrates, and vertebrates than was previously recognized.”*

Science Findings, issue twenty, November 1999, Pacific Northwest Research Station  
USDA Forest Service

<http://www.fs.fed.us/pnw/science/scifi20.pdf>

**RESPONSE** – This is a very general review of the role of down woody material in forested ecosystems. Nutrient cycling and retention of down woody material and management of organic material is included in the DEIS, Chapter 3 (Soils), pages 254-255.

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**From Dick Artley – Titled “Attachment 17 Mountain Pine Beetle Activity Does Not Increase the Fire Risk”**

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**COMMENT** - *Results were consistent across a range of fuel moisture scenarios. Our results suggest that mountain pine beetle outbreaks in Greater Yellowstone may reduce the probability of active crown fire in the short term by thinning lodgepole pine canopies.”*

*Dr. Martin Simard, Dr. William H. Romme, Dr. Jacob M. Griffin, and Dr. Monica G. Turner “Do mountain pine beetle outbreaks change the probability of active crown fire in lodgepole pine forests?” Ecological Monographs, 81(1), 2011, pp. 3–24, 2011 by the Ecological Society of America*

[http://esa.org/papers/pdf/emon-81-01-04\\_3.24.pdf](http://esa.org/papers/pdf/emon-81-01-04_3.24.pdf)

*“Forest ecologists noted this same phenomenon after the massive Yellowstone wildfires in 1988. After the large fires swept through and burned off all the tree needles, only the dead trunks remained. In the years that have followed, new wildfires have tended to slow and sometimes even burn out when they reach the standing dead forest; there simply hasn’t been enough fuel to propel the fire. “*

*CTV.ca News Staff, “Could pine beetles actually reduce forest fire risk?” Published Sunday, Sep. 12, 2010*

<http://www.ctvnews.ca/could-pine-beetles-actually-reduce-forest-fire-risk-1.551560>

*“Although the scale of the recent beetle outbreak is unprecedented in modern times, experts note that insect outbreaks and fires are a natural part of Western forest ecosystems. As such, the report found no causal link between insect outbreaks and the incidence of wildfire.”*

*Eryn Gable, “Battling beetles may not reduce fire risks – report” Land Letter, March 2010*

<http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/>

*The drumbeat of beetle mania is music to the ears of opportunists seeking to turn beetle invasions into timber sales. But logging, for any stated purpose, leads to soil erosion, soil nutrient loss and a potential increase in fine fuels that increase fire risk. Further, logging mountain pine beetle- killed trees destroys wildlife habitat. Southern Rockies woodpeckers and sapsuckers such as the hairy woodpecker and Williamson's sapsucker suffer negative effects of logging followed*

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*by slash burning where dead and dying trees (the "snags" that are their homes and feeding sites) have been removed or destroyed by fire."*

**"Beetle Mania"** Published by the Biodiversity Conservation Alliance

[http://www.voiceforthewild.org/clearcutting/beetle\\_mania.html](http://www.voiceforthewild.org/clearcutting/beetle_mania.html)

*"Logging dead trees in reaction to the current beetle outbreak - which has decimated an estimated 660,000 acres of Colorado pine forests - shouldn't be confused with efforts to reduce wildfire hazards, Kulakowski said. "Pine beetles' role in fire risk devalued -- Drought, which dries out trees and promotes the insect outbreaks, is the key hazard, a Massachusetts researcher says." Published in the Denver Post, August 2007*

[http://www.denverpost.com/news/ci\\_6520740](http://www.denverpost.com/news/ci_6520740)

**RESPONSE** – The existing conditions are described in the DEIS in the context of present day vegetation communities (Chapter 3, pages 14-29). The potential effects from proposed actions are presented in pages 29-46. Effects of the No Action alternative are presented in pages 30-35. Whether bark beetle outbreaks reduce the probability of active crown fire in the short term is irrelevant.

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**COMMENT** - *"Using data from past fires in lodgepole forests in west-central Colorado and computer modeling developed by Tania Schoennagel, adjunct assistant professor in geography and research scientist at CU's Institute of Arctic and Alpine Research, the researchers found that under extreme fire conditions, there was no significant difference in fire behavior between beetle-kill stands and those unaffected by infestation."*

Clay Evans, **"Verdict's still out on pine-beetle-kill fire effects"** Colorado Arts and Sciences magazine

<http://artsandsciences.colorado.edu/magazine/2012/10/verdicts-still-out-on-pine-beetle-kill-fire-effects/>

**RESPONSE** – Using data from past fires in lodgepole forests in west-central Colorado and computer modeling, these researchers found that under extreme fire conditions, there was no significant difference in fire behavior between beetle-kill stands and those unaffected by infestation.

However, the research also found that the probability of such *"crown fires is predicted to be somewhat higher in beetle-kill stands"*. Specifically, the chance of such catastrophic fires occurring was greater primarily in "red phase" timber, where many standing trees still bristle with dead needles.



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These dynamics have very little bearing on the Pilgrim Creek Timber Sale proposal. These authors recognize the short term increase in fire vulnerability of lodgepole pine communities following bark beetle outbreaks. This is compatible with the analysis in the DEIS.

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**COMMENT** - *"They leave behind smaller trees and other understory vegetation, which compensates for the loss of larger pine trees by taking up additional nitrate from the system. Beetle-kill conditions are a good benchmark for the protection of sub-canopy vegetation to preserve water quality during forest management activities."*

*A paper on the subject was published Monday in the Proceedings of the National Academy of Sciences." CU-Boulder researchers see an upside to pine beetle kill. **Camera staff**,  
Posted: January 15, 2013*

[http://www.dailycamera.com/cu-news/ci\\_22378043/cu-boulder-researchers-see-an-upside-pine-beetle](http://www.dailycamera.com/cu-news/ci_22378043/cu-boulder-researchers-see-an-upside-pine-beetle)

**RESPONSE** – This citation is reporter's critique of the Colorado University paper. It is of too general nature to be of value in understanding and analyzing the potential environmental impacts related to the proposed actions.

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**COMMENT** - *"These forests may look different to us, but beetle-affected forests are still functioning ecosystems that provide food and shelter for animals, cool clear water for fish and humans, and irreplaceable refuges for wildlife from the effects of logging, road building and climate change." (Pp 23 and 24).*

*Black, S. H. Ph.D., D. Kulakowski Ph.D., B.R. Noon Ph.D., and D. DellaSala Ph.D. 2010. "Insects and Roadless Forests: A Scientific Review of Causes, Consequences and Management Alternatives." National Center for Conservation Science & Policy, Ashland OR.*

<http://nccsp.org/files/Insect%20and%20Roadless%20Forests.pdf>

**RESPONSE** – We acknowledge that bark beetle infested forest stands are functioning ecosystems.

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**COMMENT** - *"Snags are used by many small mammals for shelter. When snags fall into streams, they contribute to fish habitat and stream bank stability. Suffice it to say, removal of beetle-killed trees from the forest actually leads to a reduction in forest ecosystem health."*

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George Wuerthner, ***“Pine beetles are accomplished ecosystem engineers”*** The Bozeman Daily Chronicle, guest opinion, March 29, 2010

[http://bozemandailychronicle.com/opinions/guest\\_columnists/article\\_bf43fc58-3ac3-11df-aa79-001cc4c03286.html](http://bozemandailychronicle.com/opinions/guest_columnists/article_bf43fc58-3ac3-11df-aa79-001cc4c03286.html)

**RESPONSE** – This is an opinion letter published in a Montana newspaper. It is opinion, based on conjecture and not supported by science. It has very little relevance to the decisions to be made.

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**COMMENT** - *“The report found that beetle-killed trees have little impact on fire danger because they drop their dead needles within three years, reducing the fuel in the tree crowns that often causes forest fires to spread.”*

Frey, David ***“Logging Won’t Halt Beetles, Fire, Report Says”*** NewWest.net, March 3, 2010

[http://www.newwest.net/topic/article/logging\\_wont\\_halt\\_beetles\\_fire\\_report\\_says/C41/L41/](http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/)

**RESPONSE** – Proposed actions in the Pilgrim Creek project are not designed to eliminate fire by harvesting beetle killed timber.

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**COMMENT** - *Furthermore, such silvicultural treatments could have substantial, unintended short— and long-term ecological costs associated with road access and an overall degradation of natural areas.*

Black, Scott H. Ph.D., Kulakowski, Dominik Ph.D., Barry R. Noon Ph.D., Barry R., DellaSala, Dominick A. Ph.D. ***“Do Bark Beetle Outbreaks Increase Wildfire Risks in the Central U.S. Rocky Mountains? Implications from Recent Research”*** Published in Natural Areas Journal, January 2013

<http://www.bioone.org/doi/abs/10.3375/043.033.0107>

**RESPONSE** – It is irrelevant if bark beetles increase wildfire risk. Increases in fuel loadings due to outbreaks are only one variable in woody fuel dynamics in forested stands.

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**DICK ARTLEY** – attachments titled *“Attachment 9a Glyphosate”*, and *“Attachment 18 Label Directions Unsafe”*.

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**NOTE** – Both attachments include a list of specific citations, along with quotes or paraphrased quotes selected by Mr. Artley. Given that the response to all comments contained in these attachments is essentially the same, the attachments and associated citations are not repeated here. Rather, they are available in full in the project file. The Forest Service response to these attachments follows:

**RESPONSE** – Glyphosate is one of the most widely used herbicide (2007 PURS). Conditions and patterns of land use in Europe are very different from those here in the U.S. Europe does not have huge blocks of land, like our million plus acre forests and huge "industrial" farms, but rather has a much more fragmented land use where residences and farms and forests are closely interwoven. Hence, regulations appropriate for European land uses are not directly applicable here. Specifically,

- 1) Internet articles are not reliable scientific information on which to base an analysis. The peer-reviewed scientific publications relating to the specific concerns mentioned in the Artley comment (liver damage, non-Hodgkin's lymphoma, and myeloma) have been reviewed.
- 2) Most of the links provided lead to articles that cite the same study on human cells. In some cases the links are to articles that paraphrase another article that paraphrased the study (e.g. the teamsugar article).
- 3) The herbshealing.com article does not mention glyphosate at all.
- 4) The alternatives2toxics.org article focuses on hazards identified in laboratory results and does not consider exposure as a factor in risk of the effects becoming manifest.
- 5) The human cell study (Richard et al. 2005) cited has limited applicability and several issues with regard to its use in assessing risk:
  - a. Cell lines derived from cancerous cells and grown in solutions of antibiotic mixtures and fetal calf serum may not be suitable for such toxicity studies.
  - b. Umbilical and placental cells are not immersed directly in glyphosate or formulated Roundup in a real exposure.
  - c. The *in vitro* cells were dosed with field application rates of the formulated product, ignoring the influence of organism-level physiology such as absorption through skin or GI tract, dilution, and others which account for the difference between exposure and dose in toxicity testing. Doses used in this study amount to orders of magnitude higher than those normally used in *in vitro* cell test (2% would equal 20,000 mg/kg).
  - d. The surfactant in the formulated Roundup would be expected to have harmful effects to cells because that is what surfactants are designed to do. "...the POEA surfactant behaves essentially like a soap to dissolve cell membranes." (SERA 2003). It is probable that any soap would produce similar

results. Given the very high concentrations of the doses, it is quite remarkable that the cells survived to produce any effect other than mortality.

6) The studies investigating non-Hodgkin's lymphoma associated with glyphosate use (e.g. De Roos et al. 2003), have limitations. A similar study was reviewed by EPA (2002) and discussed in the glyphosate risk assessment (SERA 2003); (a) EPA stated that, *"This type of epidemiologic evaluation does not establish a definitive link to cancer. Furthermore, this information has limitations because it is based solely on unverified recollection of exposure to glyphosate-based herbicides."* (EPA/OPP 2002); (b) The glyphosate risk assessment states: *"Given the marginal mutagenic activity of glyphosate and the failure of several chronic feeding studies to demonstrate a dose-response relationship for carcinogenicity and the limitations in the available epidemiology study, the Group E classification (evidence for non-carcinogenicity) given by the U.S. EPA/OPP (1993a, 2002) appears to be reasonable."* (SERA 2003); (c) The more recent studies contain the same limitations, as acknowledged by the authors. Risk of NHL from glyphosate exposure is still adequately addressed by the 2003 risk assessment.

7) The suggested link to myeloma is from DeRoos et al. (2005). The authors conclude, "Glyphosate exposure was not associated with cancer incidence overall, or with most of the cancer subtypes we studied. There was a suggested association with multiple myeloma incidence that should be followed up." The authors caution, "Certain limitation of our data hinder the inferences we can make regarding glyphosate and its association with specific cancer subtypes." The authors suggest their results are a starting point for further research rather than providing chemical specific conclusions. The information with its limitations is not sufficient to overturn the current weight-of-evidence concerning the carcinogenicity of glyphosate.

8) Effects to the liver from exposure to glyphosate or POEA surfactant are documented in some studies cited in the glyphosate risk assessment (SERA 2003) and the review of risks associated with surfactants (SERA 1997). A specific study reporting "leakage of intracellular enzymes" only tested a formulation manufactured in Brazil containing POEA surfactant. Since no tests were conducted with glyphosate alone, the results of the tests cannot be attributed to the active ingredient.

Imazapyr is an important herbicide because it is labeled for aquatic use, poses low risk to aquatic organisms, and is effective on broad spectrum, non-selective pre and post-emergent annual and perennial grasses and broadleaved species. It poses low risk to wildlife and people. Across the region, project design criteria are in place to ensure that no harmful exposures to imazapyr (or other herbicides) occur.

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**Montana Environmental Protection Agency**

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**COMMENT** - *We also note that the project area already has many existing roads and high road density. There are approximately 176 total miles of road in the project area, with 115 miles of Forest Service Roads, 31 miles of private roads and 30 miles of County roads. We estimate road density in the overall project area to be approximately 3.13 mi/mi<sup>2</sup> (i.e., adding up road miles and areas of all drainage basins in Table 3- 53), and road densities are much higher in certain drainage basins (e.g., Cabinet Gorge Tributary 806 =5.9 mi/mi<sup>2</sup>; South Fork Pilgrim Creek= 5.8 mi/mi<sup>2</sup>; West Fork Pilgrim Creek= 3.7 mi/mi<sup>2</sup>; Hemlock Gulch = 11.5 mi/mi<sup>2</sup>; South Fork+ Telegraph=4.3 mi/mi<sup>2</sup>). While the DEIS states that many of the existing roads are old and overgrown and no longer have exposed surfaces that contribute sediment to nearby streams (page 3-184), we note that older roads were often built with outdated management practices (those dating from the 1950s to the mid-1970s).*

**RESPONSE** - Pilgrim EAWS, road surveys, stable landtypes, no evidence of mass wasting, channel conditions driven by riparian harvest and clearing on private, channel conditions on FS generally good, with some exceptions. Road surveys in the Pilgrim EAWS were prioritized based on risk. In the Pilgrim Creek Watershed Assessment (RDG and USFS 2004) on page 30, the report states: Due to the amount of historic roads in this area, only select roads that were thought to pose risks were evaluated. The criteria for prioritizing which roads would be surveyed revolved around where the roads were located in terms of their topography (draws or ridge noses) and the land and soil types, which they resided. Road segments constructed in compactable soils with high surface and subsurface erodibility took priority in the survey. Current information on road characteristics of interest included road prism stability (type and quality of vegetative cover, soil saturation, active water rerouting, and risk of failure), intermittent or perennial sediment contributions to connective draws, and stream crossings and their associated culvert, bridge or ford condition (plugged, undersized, risk of failure, existence or not).

A total of 20 miles of these historic roadways were ground surveyed. The areas surveyed included the headwaters of Telegraph Creek and both the South and West forks of Pilgrim Creek as well as an old mine road that is now a trail (SF Trail 1084) midbasin in the South Fork of the Pilgrim Creek basin.

Proposed road construction will occur on Landtypes 555 and 552 (Figure 3-21 in the DEIS) both of which have a slight erosion hazard and moderate delivery efficiency for sediment. Most new road construction in the project is located away from live water with two exceptions for extensions of existing roads on spurs 2744C and 2744D.

**COMMENT** - *We did not see a compelling case presented in the DEIS explaining how the 142 acres of additional timber harvests proposed with Alternative 3 would better address the project purpose and need and justify the proposed construction of 5.8 miles of new road in an area with many existing roads. We also note the significant cost for 5.8 miles of new road construction. Land management decisions involve environmental and resource management trade-offs (i.e., trade-offs in impacts among vegetation treatments, restoration of vegetative conditions, fire risk*

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*and fuels, forest health, wildlife, water quality and fisheries, air quality, weed spread, and other resource impacts). From our perspective selection of Alternative 4 as the preferred alternative provides a more reasoned evaluation of the various trade-offs.*

**RESPONSE** – Final selection of an alternative will take place after consideration of all comments on the DEIS, and will be documented in the Record of Decision (ROD). A description of the alternatives is presented in the DEIS, Chapter 2, pages 2-55. Table 2-16 (Chapter 2, pages 53-55) displays a comparison of all alternatives based on specific metrics, including new road construction. The potential environmental impacts related to road construction are addressed throughout Chapter 3. The decision maker will provide his rationale for selection of the selected action in the ROD. The IDT recognized the cost of new road construction and evaluated various scenarios for accessing different portions of the project area. The amount of new road required to access and manage an acre of ground is higher on steeper slopes common to this area than it is in gentler terrain.

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**COMMENT** – *If there is a compelling forest health or other need for some of the 142 acres of additional timber harvests with Alternative 3 in comparison to Alternative 4, perhaps a modified alternative could be developed for conduct of additional necessary timber harvest with a lesser amount of new road construction (i.e., an alternative between Alternatives 3 and 4, with less than 5.8 miles of new road construction). We also recommend additional discussion explaining the rationale for selection of the preferred alternative be provided in the FEIS.*

**RESPONSE** - The decision maker will provide his rationale for selection of the selected action in the ROD. The IDT recognized the cost of new road construction and evaluated various scenarios for accessing different portions of the project area. The amount of new road required to access and manage an acre of ground is higher on steeper slopes common to this area than it is in gentler terrain.

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**COMMENT** – *The DEIS also states that routine road maintenance would occur as needed in the analysis area, and that no significant changes in road maintenance are expected over the next 10 years. This causes some concern since it is known that prolonged under-funding of road maintenance on National Forests has often resulted in degraded road conditions, and there is a significant backlog of road maintenance needs on National Forests (Source: "Rightsizing" the Forest Service Road System Part 1: Road Trend Analysis, March 22, 2007). Adequate funding for road maintenance and implementation of road BMPs is needed to address water quality effects of roads. Conduct of proper road inspections, maintenance and improvements to forest road systems and road BMPs and drainage improvements are critical for protecting aquatic health.*

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**RESPONSE** – Montana DEQ has determined that Pilgrim Creek is impaired due to habitat alterations on private lands and not due to sediment loading from roads, indicating that BMPs have been adequately applied and are protecting aquatic resources at the drainage scale.

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**COMMENT** - *We suggest that the FEIS better identify the watershed in which proposed treatment units are located. We did not see this information clearly displayed in the DEIS.*

**RESPONSE** - While it is not clearly displayed it can be inferred from Table 3-17 and 3-54 by comparing the peak flow increase relationship for basin size with the predicted peak flow increase shown in Table 3-54. This information is contained in the project file.

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**COMMENT** - *We recommend that the KNF consult with Montana DEQ TMDL program staff to assure that the MDEQ considers the proposed Pilgrim Creek Timber Sales Project to be consistent with the Lower Clark Fork Tributaries Sediment TMDLs and Framework for Water Quality Restoration, <http://deq.mt.gov/wqinfo/TMDL!finalRepotis.mcp>, (e.g., contact MDEQ staff such as Mr. Dean Yashan at 406-444-5317, and/or Mr. Robert Ray at 406-444-5319). We also encourage review of the MDEQ's pamphlet, "Understanding the Montana TMDL Process." <http://deq.mt.gov/wqinfo/TMDL!default.mcp>.*

**RESPONSE** – See Forest Service response to Montana DEQ comments, for a detailed response to this comment.

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**COMMENT** - *Some uncertainty is created, however, in regard to whether all this BMP and culvert replacement work would be carried out, since these activities are stated to depend on funding availability (page 3- 22), and we know road maintenance funding is limited. We consider it important that adequate funding be provided to assure that proposed BMP work and culvert replacements take place to avoid exacerbating existing "poor" channel conditions. We encourage the KNF to implement the proposed road BMP work that is needed, particularly replacement of all undersized culverts.*

**RESPONSE** – Appendix D in the DEIS contains a comprehensive discussion of planned Best Management Practices for the Pilgrim Creek Timber Sale project should it be implemented. The Forest Service has faced uncertain funding for various expenditures since its inception. All work is prioritized and implemented as funding is available. Montana DEQ has determined that Pilgrim Creek is impaired due to habitat alterations on private lands and not due to sediment loading from roads, indicating that BMPs have been adequately applied and are protecting aquatic resources at the drainage scale.

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**COMMENT** - *We suggest that the FEIS more consistently indicate that skyline cable rather than tractor logging will be used on slopes greater than 35%.*

**RESPONSE** – Tractor skidding will not take place on slopes greater than 35%. Site inclusions of small areas exceeding 35% slope would require tractor winching of logs on these steeper sites.

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**COMMENT** - *We appreciate the DEIS discussion of the effects of roads on watersheds and water quality, and disclosures of road conditions and estimated road sediment yield in the DEIS (pages 3-165 to 3-200, Pages 3-220 to 2-224). The preferred alternative would involve 4.7 miles of new road construction and 1.1 miles of temporary road construction, and 47 miles of road reconstruction and BMP implementation. It is not clear if the approximately 5.2 miles of closed road that would be reopened and used in Alternative 2 (page 2-13) would also be reopened and used in Alternative 3. This should be clarified in the FEIS.*

**RESPONSE** – There would be some minor differences in haul roads between the action alternatives. Appendix A, “Alternative Maps” clearly show the intended haul routes by alternative.

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**COMMENT** – *Table 3-68 (page 3-241) shows landtypes and soil risk ratings evidencing high erosion risk ratings for a number of landtypes. We did not see clear disclosure regarding treatment units that may be proposed on landtypes with "severe" sediment hazards or erosion risks. Table 3-70 (page 3-244) indicates that the preferred alternative includes the highest acreage of timber harvest, 1,434 acres, on sensitive soils. Landtype 112 is stated to be a "landtype of concern" and accordingly no harvest is proposed on this landtype. However, landtype 112 is identified as having only "moderate" sediment hazard related to timber management in Table 3-68, whereas landtypes 101, 103, 252 and 252 are shown as having "severe" sediment hazards related to timber management. Is any timber harvest proposed on these "severe" sediment hazard landtypes? Similarly is any road construction proposed on "severe" road management hazard landtypes (i.e., landtypes 101, 103, 108, 112, 552)? We generally recommend avoidance of tractor timber harvest and road construction in areas with high risk of erosion potential.*

**RESPONSE** - Landtype 552 has a “slight” hazard of erosion. This typographical error has been corrected in the FEIS. Proposed road construction in Alternative 3 would occur on Landtypes 555 (3.4 mi.) and 552 (1.3 mi.). Temporary road construction would occur on Landtype 552 (1.1 mi.).

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**COMMENT** - *We are pleased that Table 3-71 (pages 3-247, 3-248) appears to show that no treatment units would result in exceedances of the Regional Standard of 15 percent detrimental soil disturbance. Units 23, 32, and 40C seem to come closest to the Regional Soil Standard at 12*

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*and 13 percent detrimental soil disturbance in some alternatives, including the preferred alternative. These units are all shown as tractor harvest units in Table 2-6 for the preferred alternative. Would it be more conservative to switch these units to skyline cable harvest to reduce risk of exceeding the Regional Soil Standard?*

**RESPONSE** - Generally, no. Units 23 and 32 are tractor units with no road at the top of them to facilitate cable yarding. Each would require approximately three quarters of a mile of new road construction to access the top of the units. Unit 40C's elevated DSD is, in large part, due to the presence of a road prism built to facilitate harvest of some small, patch clearcuts approximately 30 years ago. We plan to utilize this road for harvest and rehabilitate and decommission this road after use.

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**COMMENT** – *The DEIS states that all types of detrimental soil disturbance will be considered in the examination of the existing condition and analysis of the environmental effects, including road construction, timber harvest, and fire (page 3-243). Although the DEIS later states that authorized forest roads, as defined in 36 CFR 212.1, are not considered part of the productive land base, and thus, do not count toward the 15% soil quality standard (page 3-251). It appears to us that all potential direct and indirect environmental effects, including effects on soils from all proposed activities including forest roads should be evaluated and disclosed to meet NEPA disclosure requirements (40 CFR 1502.16). Are road construction effects on soil disturbance fully disclosed in the DEIS Chapter 3 soils analysis?*

**RESPONSE** – Region 1 protocol for analyses of detrimental soil impacts recognizes that road prisms are no longer part of the productive land base. The DEIS documents the analysis, in compliance with law, regulation and policy. Road construction involves displacement and compaction of soil and subsoil, so by definition it results in detrimental soil disturbance. Other environmental effects including potential for erosion and sediment delivery to channels, impacts to wildlife habitat, etc. are discussed in the appropriate resource section.

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**COMMENT** – *It is stated that timber management staff will conduct monitoring, including soil disturbance transect information and walk-through surveys to monitor during and after timber sale activity (page 2-51). We assume this will include post-project implementation soil monitoring to ensure compliance with soil quality standards. How long will such soil monitoring occur after harvests and road construction? How many sites will be monitored and evaluated for soil disturbance and compliance with soil quality standards?*

**RESPONSE** – The monitoring plan for the Pilgrim Creek Timber Sale is presented in Appendix J of the DEIS. Soil monitoring is part of a comprehensive Forest-level program designed to assure compliance at a broad scale with Regional soil management standards. Soil monitoring generally

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occurs following completion of all ground disturbing activities in a unit (i.e. felling, skidding, loading, and slash disposal and cleanup).

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**COMMENT** – *In addition to health-based standards to protect ambient air quality, the Clean Air Act requires special protection of visibility in the nation's large National Parks and Wilderness Areas (identified as mandatory Class I Federal areas) and establishes a national goal for "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I federal areas which impairment results from man-made air pollution." EPA's Clean Air Act implementing regulations require states to submit State Implementation Plans that, among other things, demonstrate attainment of the National Ambient Air Quality Standards (NAAQS), as well as reasonable progress toward the national visibility goal. Actions by Federal Land Managers that lack adequate mitigation of air quality impacts could impede a state's ability to meet Clean Air Act requirements. It is important that Project activities, when combined with air quality impacts from external sources, do not adversely impact the NAAQS or air quality related values (AQRVs) such as visibility.*

**RESPONSE** – We concur. The analysis of air quality impacts is included in the DEIS (Chapter 3, pages 321-333).

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**COMMENT** – *The DEIS includes minimal discussion regarding climate change (page 3-29). We often encourage inclusion of more detailed climate change information in NEPA documents since it contributes to improved public understanding of the effects of climate change on forest ecosystems and forest management, particularly the effects of hotter and drier conditions in stressing trees, increasing the frequency of bark beetle outbreaks, and allowing bark beetles to move northward or higher in elevation and into other ranges of their hosts or the ranges of new potential hosts. Climate change research indicates that earth's climate is changing, and that the changes will accelerate, and that human greenhouse gas (GHG) emissions, primarily carbon dioxide emissions (CO<sub>2</sub>), are the main source of accelerated climate change (United Nations Intergovernmental Panel on Climate Change (IPCC), <http://www.ipcc.ch/>).*

**RESPONSE** – Climate change and carbon flux are analyzed in the DEIS, as stated (Chapter 3, pages 29-31, 35). As stated on page 35, *"Even though some management actions may initially reduce total carbon stored below current levels, they improve the overall capacity of the forest to sequester carbon in the future, while also contributing to other multiple use goods and services"*.

Resource Management staff in the Regional Office developed an *Integrated Restoration and Protection Strategy*<sup>4</sup> (IRPS) in 2010 to help local Forest Service units identify and prioritize potential areas for accomplishing planning goals and objectives. In that effort, five key tree

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<sup>4</sup> <http://www.fs.usda.gov/goto/r1/irps>

species or types were identified as high priority for management focus: western larch, ponderosa pine, western white pine, whitebark pine, and aspen mixed with conifer forests. In the past, these species (moderately to quite intolerant to shade) have been well adapted to various disturbance agents and produced resilient forest conditions in landscapes with diverse forest composition and structure. We hypothesize that these species - if in landscapes restored to diverse patterns of structural stages - will be best able to cope with and adapt to an uncertain but anticipated increase in disturbance processes such as bark beetles, wildfire, and root disease. These tree species/types are also associated with **critical wildlife habitat**. Many mixed conifer forests provide habitat for sensitive or listed endangered wildlife species. For example, forests that contain western larch, whitebark pine, Engelmann spruce and subalpine fir provide winter foraging habitat for sensitive species such as the Canada Lynx (listed as an endangered species under ESA) which is a high priority management objective.

While the effects of the project on atmospheric concentrations of CO<sub>2</sub> are imperceptible in the short-term and the long-term, it is recognized that the forests of the United States reduce the global warming potential of fossil fuel emissions by removing a measurable portion of CO<sub>2</sub> from the atmosphere. The most recent estimates indicate that U.S. forests and wood products sequester approximately 910 teragrams of CO<sub>2</sub> eq. in 2007, and the net annual sequestration has increased by 50 percent since 1990 (US EPA 2009, page 7-15). According to the U.S. EPA, this represents about 15 percent of total U.S. greenhouse gas emissions in 2007 (US EPA 2009, page ES-4). Another recent analysis estimates that U.S. forests and wood products offset nearly 20 percent of U.S. fossil fuel emissions (Pacala et al., 2007). These nation-wide estimates are produced as part of the U.S. Climate Change Science Program and the U.S. contribution to the United Nations Framework Convention on Climate Change program to develop and periodically update national inventories of greenhouse gas emission sources and sinks. In addition, to the U.S. Forest Services contributions to these national efforts, the Forest Service also conducts national assessments of its activities on global warming (Joyce et al. 2008; Ryan et al. 2008; USDA 2007; Joyce et al. 2000). Given the global scale of global warming, national and international inventories, syntheses, and assessments, are a much more effective method of evaluating cumulative effects of land management and other human activities on atmospheric concentrations of CO<sub>2</sub> and other greenhouse gases than analyses of individual, small-scale vegetation management projects, such as the Pilgrim Creek Timber Sale Project.

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**COMMENT** – *The DEIS Chapter 3 discussion of forest vegetation provides helpful information regarding project effects on forest successional stages, fire ecology, species composition and forest structure. We support the need to restore fire as a natural disturbance process, and to help address competing and unwanted vegetation and fuel loads and fire risk and forest health. A significant amount of regeneration harvest is proposed with the preferred alternatives (i.e., total of 898 acres, with 512 acres of seed tree harvest, 386 acres of shelterwood harvest). It is stated that 10 or more trees per acres (tpa) would be left in regeneration harvests in Chapter 2 (page 2-36), although in Chapter 3 it states that as few as 4 tpa may be left in regeneration*

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*harvests (page 3-38). This should be clarified in the FEIS to promote consistent disclosure in the EIS document.*

**RESPONSE** – The DEIS, on page 3-38 states “Generally a minimum of 4-12 trees per acre would be left in regeneration harvest (units)”. As described in chapter 2, the objective is to retain a minimum of 10 trees per acre. This apparent discrepancy reflects the highly variable nature of current stocking levels, by species, within and between stands proposed for harvest. The ultimate reserve tree stocking could be limited in some stands, as that is dependent on the availability of suitable leave trees of desirable species.

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**COMMENT** – *While we support weed control, it’s important to recognize that herbicide use for weed control has the potential to cause adverse effects to water quality and fisheries. Herbicide drift into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetland species. Montana’s Water Quality Standards include a general narrative standard requiring surface waters to be free from substances that create concentrations which are toxic or harmful to aquatic life. We recommend that herbicide weed treatments be coordinated with the Forest botanist to assure protection to sensitive plants, and coordinated with fisheries biologists and wildlife biologists to assure that sensitive fisheries and wildlife habitat areas are protected.*

**RESPONSE** – All use of herbicides would be in full compliance with label instructions. Oversight of this use would be conducted by the District Botanist, in conjunction with the Kootenai National Forest Botanist.

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**COMMENT** – *Since the Biological Assessment and EIS must evaluate the potential impacts on listed species, they can jointly assist in analyzing the effectiveness of alternatives and mitigation measures. If T&E species are subsequently identified in the project area, EPA recommends that the final EIS and Record of Decision not be completed prior to the completion of ESA consultation. If the consultation process is treated as a separate process, the Agencies risk USFWS identification of additional significant impacts, new mitigation measures, or changes to the preferred alternative.*

**RESPONSE** – This is standard protocol.

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**COMMENT** - *We found the minimum required number of snags to be retained per acre in various vegetative habitats to be confusing. The DEIS states that the Northern Region Snag Management Protocol recommends that 4-12 snags per acre be left (page 3-63), but also states that all proposed units in Alternatives 2, 3, 4, and 5 maintain at least 40% snag level (page 3-64). It is not clear if the Northern*

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*Region Snag Management Protocol (4-12 snags per acre) or the 40% snag levels• provides the snag retention requirement for the proposed project. This should be clarified in the FEIS.*

**RESPONSE** – The analysis of snag habitat is documented in the DEIS (Chapter 3, pages 58-64). The “regulatory consistency” discussion (page 63-64) clearly states that the Forest meets, and the project would meet Kootenai National Forest Plan standards for snag habitat.

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**COMMENT** - *Table 3-54 (page 3-182) shows predicted changes in peak flows by alternative. Table 3-54, like Table 3-50 show high peak flow increases in the Smeads Creek, Hemlock Gulch, and Cabinet Gorge Tributary 823 watersheds. Table 3-54 shows no increase in peak flow between no action and action alternatives in the Cabinet Gorge Tributary 823 watershed. We assume that this means that no additional timber harvest is proposed in Cabinet Gorge Tributary 823 watershed with the Pilgrim Creek Timber Sale Project. Is this correct?*

**RESPONSE** - Yes

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**COMMENT** - *Peak flows increase in the action: alternatives (in comparison to the no action alternative) in the Smeads Creek and Hemlock Gulch watersheds (e.g., peak flow increase from 18% to 23% in Smeads Creek watershed with the preferred alternative; increase from 13% to 14% in the Hemlock Gulch watershed with the preferred alternative). It appears, therefore, that additional timber harvests may be proposed in the Smeads Creek and Hemlock Gulch watersheds. This causes some concern, since additional harvests in these watersheds have potential to further increase already high peak flows.*

**RESPONSE** - These are dry draws with no connectivity to the reservoir (DEIS 3-174, 175)

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**COMMENT** - *A total of 4,564 acres is proposed for burning in the project area with approximately 2,165.8 acres (47%) occurring in drainages supporting fisheries (page 3-224). In regard to the potential water yield increase associated with prescribed fire the DEIS states that no direct or indirect effects on water yield are anticipated from prescribed burning (page 3-185). It appears likely to us that prescribed burning would have some effect on water yield, at least in the short term. The accuracy of this DEIS statement, therefore, appears questionable. However, we fully support reintroduction of fire to forest landscapes that evolved with fire as a means of managing fuel loads and restoring natural ecosystem processes, and we agree that significant or lasting water yield effects should not result from properly managed prescribed burning. We also agree that use of prescribed fire allows the land manager to reduce future wildfire severity and risk of creating larger areas burned at high intensity, and thus, even higher water yields (page 3-186). We also appreciate the DEIS discussion of prescribed burning effects on aquatic habitat (page 3-224 and 3-225).*

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**RESPONSE** - Prescribed burning will occur in lightly forested, brush dominated settings where water yield increases will be negligible to non-existent.

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## ERRATA

The following are errors that were discovered after copies of the DEIS were printed. **Bold print** indicates a specific correction in text or data. The changes were determined by the interdisciplinary team to be minor and will not change the conclusions presented in the DEIS. These corrections were reviewed by the deciding official prior to the decision documented in the Record of Decision.

<u>Location in DEIS</u>	<u>Correction</u>
1-1	<b>All or portions of Sections 6 - 9, 16, 17, and 21, T25N, R32W; Sections 1 - 12, 14 - 17, T25N, R33W; Sections 1 and 12, T25N, R34W; Sections 16,17, 20 - 22, 26 - 36, T26N, R33W; and Sections 26, 35, and 36, T26N, R34W, PMM.</b>
2-10	Openings are such: <b>43</b> acres, <b>54</b> acres, <b>43</b> acres, <b>139</b> acres, <b>71</b> acres, <b>50</b> acres, <b>49</b> acres, and <b>136</b> acres for a total of <b>585</b> acres that will be considered openings in regard to wildlife values
2-17	Alternative 3 would initiate <b>six</b> openings for a total of <b>922</b> acres. Three openings (201 acres, 321 acres, and <b>187</b> acres) will result from regeneration harvest in stands being infested by mountain pine beetle or infected with root disease.
2-27	Alternative 4 would initiate 5 openings for a total of <b>871</b> acres. Three of these openings ( <b>295</b> acres, <b>165</b> acres, and <b>320</b> acres) will result from regeneration harvest in stands being attacked by mountain pine beetle or infested with root disease.
3-53	<b>Table 3-11. Summary of measurement criteria to evaluate effects to old growth,</b> Row 5 "Acres treated with prescribed fire to maintain old growth character" should equal <b>530 acres</b> for all action alternatives.
3-70	<b>Table 3-16 Elk habitat components by alternative,</b> Row 5 should read: Open Road Density Within Stevens Ridge Amendment Area (mi/mi <sup>2</sup> ) MA-12, std.< 1.46 mi./mi <sup>2</sup> outside of the general big game hunting season,< 1.02 mi./mi <sup>2</sup> during the general big game season, and < 2.0 mi/mi <sup>2</sup> during sale activities. When sales are active the standard shall be < 1.31 mi/mi <sup>2</sup> during the general big game season.
3-70	<b>Table 3-16 Elk habitat components by alternative,</b> Row 6 under Alternative 3 should read: <b>2.6 mi/mi<sup>2</sup>.</b>
3-72	Alternative 3 includes <b>6</b> openings 40 acres or greater... Alternative 4 includes <b>5</b> openings 40 acres or greater, ranging from <b>44</b> to <b>320</b> acres in size.
3-111	<b>Table 3-24. Sensitive Species Summary</b> <b>Bighorn sheep,</b> common loon, flammulated owl, harlequin duck, northern bog lemming, northern leopard frog, and wolverine are not suspected to occur in the project area and are dropped from further analysis. There would be no impacts to these species or their habitat. The proposed action and alternatives 3, 4, and 5 will have no impact on Peregrine falcon or bald eagle. The proposed action and alternatives 3, 4, and 5 may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species for the <b>black-backed woodpecker,</b> Coeur d'Alene salamander, fisher, gray wolf, Townsend's big-eared bat, and western toad.

<u>Location in DEIS</u>	<u>Correction</u>
<b>3-117</b>	All new and currently restricted roads used for the project will be closed with a gate for the life of the project. While the project is active only administrative use will occur on the roads (FS personnel and government contractors). There will be no public access on the new and currently restricted roads in the project area unless project activities are completed during an active bear year and public firewood gathering is feasible. At that point, the road may be opened to the public <b>outside of</b> the big game hunting season. <b>Firewood gathering could occur from June 16 through August 31.</b>
<b>3-130</b>	<b>Statement of Findings</b> The proposed action <b>may affect, but is not likely to adversely affect</b> the lynx. This determination is based on: 1) 677 acres (4%) of LAU converted to the early stand initiation stage, 2) 560 acres (3%) of LAU will receive regeneration harvest, (3) no precommercial thinning included in project, (4) 493 acres of harvest in stands that cover surveys demonstrate do not meet standards for lynx. Additionally, lynx presence has not been confirmed on the Cabinet Ranger District since 1998. Habitat manipulation that has the potential to increase snowshoe hare foraging habitat could increase local hare populations that may benefit any transient lynx that could happen through. Snow conditions will likely continue to limit habitat quality for lynx in this area.  The proposed federal action will not affect designated Canada lynx critical habitat.  *Note- this determination was included in the Biological Assessment submitted to the US Fish and Wildlife Service and supplants the determination made in the DEIS.
<b>3-170</b>	The current percent ECA and PFI for each seventh code HUC (hydrologic unit code) within the Pilgrim Creek planning area has been assessed (see Table <b>3-50</b> ) along with current stream survey information, which was used to establish Recommended Peak Flow Increases (RPFIs) and arrive at the Allowable Clearcut Equivalent (ACE).
<b>3-184</b>	The new road construction will add to the current ECA's within each basin (Table <b>3-54</b> above).
<b>3-241</b>	Table 3-68, sediment hazard rating for Lantype 552 should be <b>Slight (changed from severe)</b>
<b>3-275</b>	Alternative 4 would also create one opening over 40 acres in size as describe above; Units 39 (20ac), 39A (62ac), 39B (33ac), 40 (137ac) and existing opening of 68 acres for a total of <b>320</b> acres.
<b>I-1</b>	List of recipients; add The Lands Council, remove US Coast Guard
<b>J-1</b>	Delete "Monitor RMO Attainment" from Monitoring Plan. (This item was mistakenly included from another project where active stream channel restoration was proposed and was intended to measure progress towards desired conditions.)

## Tables

The following tables replace those found in the DEIS

Page 2-19

Table 2-5. Over 40 acre Openings in Alternative 3

Unit	Proposed Treatment	Acres	Cumulative Opening Size	Rationale for large openings	Regional Forester Approval Needed
4 Existing opening Existing opening 5 6	Shelterwood w/ Reserves None None Shelterwood w/Reserves Shelterwood w/Reserves	31 9 15 14 7	76	Heavy root rot adjacent to existing opening.	YES
largest section of 8  10T 10S 10B	Shelterwood w/ Reserves  Seedtree w/ Reserves Seedtree w/ Reserves Seedtree w/ Reserves	46  18 61 76	201	Mortality in lodgepole pine due to mountain pine beetle	NO
12S 12  Existing Openings  12B 18	Seedtree w/ Reserves Seedtree w/ Reserves  None Shelterwood w/ Reserves Shelterwood w/ Reserves	10 171  39 75 26	321	Mortality in lodgepole pine due to mountain pine beetle, root rot.	YES
31  32 Existing opening	Seedtree w/ Reserves  Seedtree w/ Reserves None	30  10 10	50	Mortality in lodgepole pine due to mountain pine beetle	NO
39  Existing Opening  40	Shelterwood w/ Reserves   Seedtree w/ Reserves	20  32 35	87	Heavy root rot adjacent to existing openings/visuals.	YES

Unit	Proposed Treatment	Acres	Cumulative Opening Size	Rationale for large openings	Regional Forester Approval Needed
37	Shelterwood w/ Reserves	34			
39A	Shelterwood w/ Reserves	36			
39B	Seedtree w/ Reserves	33			
40B	Shelterwood w/ Reserves	29			
40C	Shelterwood w/ Reserves	19			
Existing Opening	None	36	187	Heavy root rot adjacent to existing openings/visuals.	YES

Note- Units adjacent to unit 23 were examined and determined to be providing hiding cover so would no longer create an opening larger than 40 acres. Unit 23 is a four acre unit.

Page 2-28

Table 2-8. Over 40 acre Openings in Alternative 4

Unit	Proposed Treatment	Acres	Cumulative Opening Size	Regional Forester Approval Needed
4 Existing opening	Shelterwood w/ Reserves None	35 9	44	NO
8S 8T 10 Existing opening	Shelterwood w/ Reserves Shelterwood w/ Reserves Seedtree w/ Reserves None	118 64 86 25	293	NO
12 18 Existing Opening	Seedtree w/ Reserves Shelterwood w/ Reserves None	100 26 39	165	YES
31 32 Existing opening	Seedtree w/ Reserves Seedtree w/ Reserves None	30 10 9	49	NO
39 Existing Opening 39A	Shelterwood w/ Reserves None Shelterwood w/	20 22 62		

Unit	Proposed Treatment	Acres	Cumulative Opening Size	Regional Forester Approval Needed
Existing Opening 39B	Reserves <b>None</b>	2	320	YES
Existing Opening 40	Seedtree w/Reserves <b>None</b>	33		
Existing Opening	Shelterwood w/Reserves <b>None</b>	35		
		137		
		9		

Note- Units adjacent to units 23 and 23B were determined to be providing hiding cover so would no longer create an opening larger than 40 acres.

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Table 3-8. Number and total acreage of proposed openings larger than 40 acres

Alt.	Total Number of Openings	Openings (in acres) Impacted by Root Disease	Openings (in acres) Impacted by Mountain Pine Beetle	Total Opening Acres
2	8	390	196	585
3	6	408	643	922
4	5	364	507	871
5	0	0	0	0

## Omissions to LITERATURE CITED – Appendix H

Stoen, O. G. et al 2010. Behavioural response of moose *Alces alces* and brown bears *Ursus arctos* to direct helicopter approach by researchers. *Wildlife Biology*, 16(3):292-300. 2010.

Squires, J.M., 2008. Personal communication with Steve Johnsen at the Northern Rockies Lynx Management Workshop, Missoula MT. February 20, 2008.



## Appendix L


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# Biological Assessment and Concurrence

BIOLOGICAL ASSESSMENT  
for  
THREATENED, ENDANGERED AND PROPOSED SPECIES  
in the  
PILGRIM CREEK TIMBER SALE PROJECT


Cabinet Ranger District  
Kootenai National Forest  
February 20, 2013

**Prepared by:**

  
District Wildlife Biologist

2/20/2013  
Date

**Reviewed/Approved by:**

  
Supervisory Wildlife Biologist

20 Feb 2013  
Date



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## SUMMARY OF FINDINGS

Implementation of the proposed federal action *may affect, but is not likely to adversely affect* the grizzly bear and the Canada lynx.

Implementation of the proposed federal action would have *no effect* on designated Canada lynx critical habitat.

## CONSULTATION REQUIREMENTS

In accordance with the Endangered Species Act and its implementing regulations, and FSM 2671.4, the Kootenai National Forest is required to initiate formal consultation with respect to the determination of potential effects on grizzly bear. The record of consultation is found in Appendix I.

In accordance with the Endangered Species Act and its implementing regulations, and FSM 2671.4, the Kootenai National Forest is required to request written concurrence with respect to the determination of potential effects on listed or proposed species. This project requires concurrence for Canada lynx. The record of consultation is found in Appendix I.

## NEED FOR RE-ASSESSMENT BASED ON CHANGED CONDITIONS

The findings of this Biological Assessment are based on the best data and scientific information available at the time of preparation. If new information reveals effects that may impact threatened, endangered or proposed species or their habitats in a manner or to an extent not considered in this assessment; if the proposed action is subsequently modified in a manner that causes an effect that was not considered in this assessment; or if a new species is listed or habitat identified that may be affected by the action; a revised Biological Assessment should be prepared.

## INTRODUCTION

This Biological Assessment addresses the potential effects of the proposed federal action on all threatened, endangered and proposed species known or suspected to occur within the areas of influence of the proposed action. General life history information on these species is provided by a number of scientific papers that are incorporated by reference into this Biological Assessment. The analyses are based on a review of Forest and District records, a thorough review of the best relevant scientific information, a consideration of responsible opposing views, an acknowledgment of incomplete or unavailable information and recognition of relevant scientific uncertainty.

Threatened, endangered and proposed species are managed under the authority of the federal Endangered Species Act (PL 93-205, as amended) and the National Forest Management Act (PL 94-588). The Endangered Species Act (ESA) of 1973 declares that all Federal agencies ... "utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act." The ESA (Section 7) requires federal agencies to ensure that any agency actions (any action authorized, funded, or carried out by the agency) are not likely to jeopardize the continued existence of any threatened, endangered, or proposed species.



## DESCRIPTION OF PROPOSED ACTION

### (Location, Purpose, and Activities of the Proposed Action)

The proposed federal action is Alternative 3 as described in the Pilgrim Creek Project DEIS. Alternative 3 would harvest approximately 1434 acres using a combination of regeneration and intermediate harvest prescriptions. Logging would be accomplished using both ground-based (551 ac.) and skyline (883 ac.) yarding systems. It would build 4.7 miles of new, permanent road and 1.1 miles of temporary road that would be decommissioned following completion of harvest activities. In addition to harvest-related activities, Alternative 3 would authorize prescribed burning on approximately 4,564 acres to improve forage for big game species on brush-dominated high energy south and west facing slopes across the project area.

The project is located on the Cabinet Ranger District of the Kootenai National Forest. It is approximately 10 air miles northwest of Trout Creek, Montana (see Figure 1: Vicinity Map) and falls within the Pilgrim Creek Planning Sub-unit (PSU), which includes the Pilgrim and Smeads Creek drainages. The project area is located in the Clark Fork Bears Outside of the Recovery Zone (BORZ) Polygon. Project details are shown on Figure 2, the Project Map.

The proposed action is a timber sale that is designed to improve growing conditions, reduce stand densities, increase the proportion of root disease-resistant tree species, and increase age class diversity in lodgepole pine dominated communities. The project will also improve forage production and quality. Table 1 summarized the proposed activities. All new roads constructed for the project will be restricted from public use when they are constructed and motorized access will return to pre-project conditions following completion of sale activities.

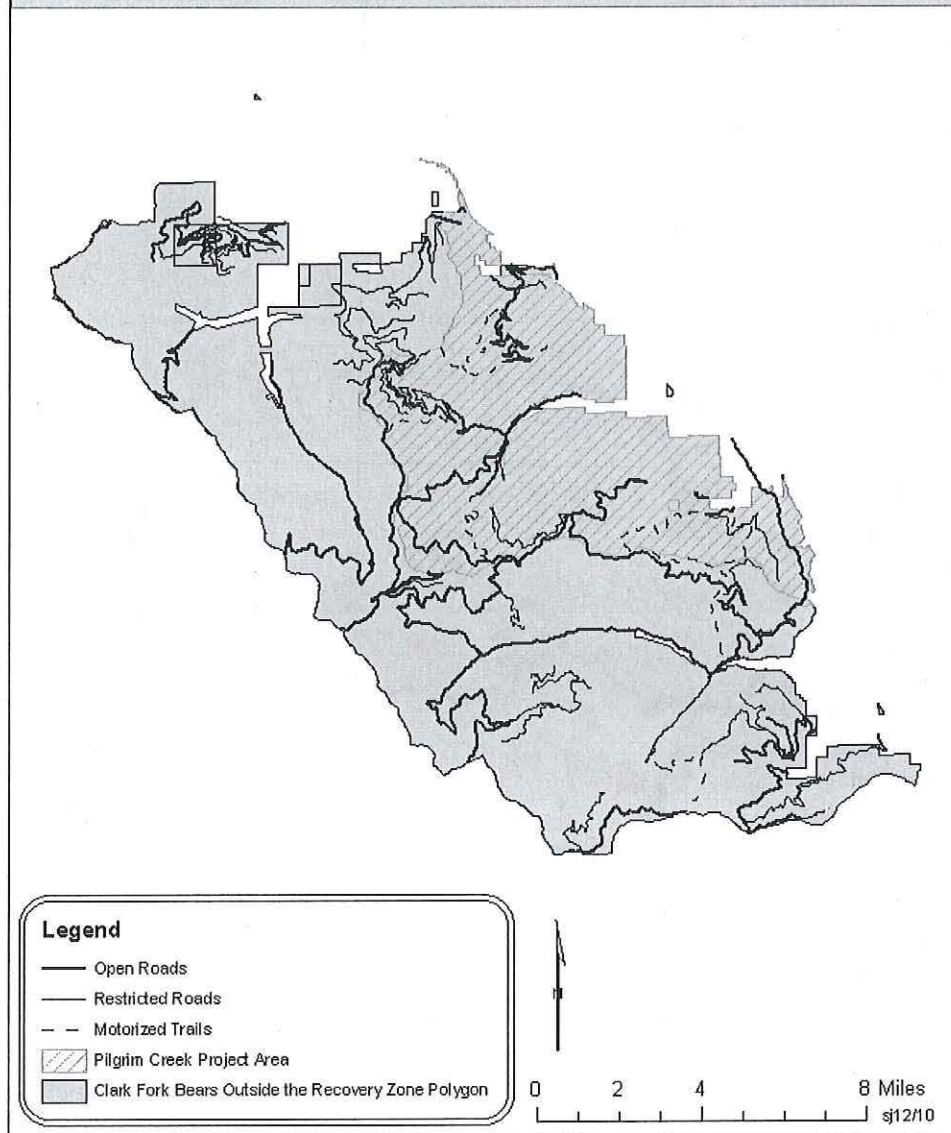
Table 1: Proposed Activity Summary

<b>Project Activity</b>	<b>Acres/Miles</b>
Total acres in Analysis Area (Pilgrim PSU)	29,987
Total Treated Acres (% of PSU)	5,998 (20%)
Regeneration Harvest (seed tree) (acres)	512
Regeneration Harvest (shelterwood) (acres)	366
Intermediate Harvest (commercial thin) (acres)	591
Prescribed Fire (acres)	4,564
New Permanent Roads Constructed (miles)	4.7
Temporary Roads Constructed (miles)	1.1
Roads Re-constructed (miles)	47

## PAST, PRESENT, AND FORSEEABLE FUTURE PROJECTS

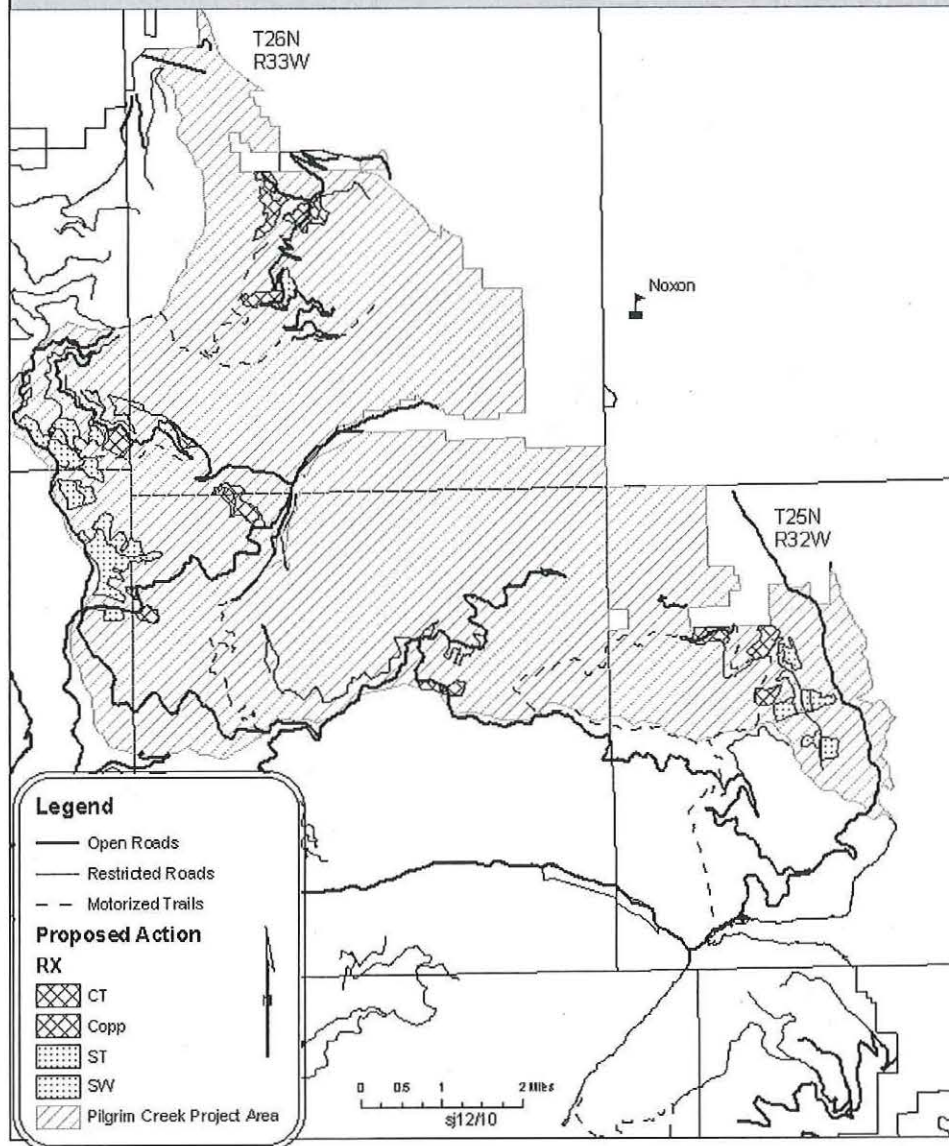
Past projects that are completed are part of the existing condition. Current, active projects that overlap the proposed action in area of influence and time were considered for either the existing condition or as cumulative effects (Appendix II). Foreseeable future projects were considered for cumulative effects if they are likely to occur on other than Federal lands. Future projects on federal lands would be subject to separate consultation under the Endangered Species Act, as modified.

## Bears Outside of the Recovery Zone Polygon and the Pilgrim Creek Project Area



**Figure 1.**

## Bears Outside of the Recovery Zone Polygon and the Pilgrim Creek Project Area



**Figure 2.**



## SPECIES LIST

A current species list for the Kootenai National Forest (KNF) was obtained from the U.S.D.I. U.S. Fish and Wildlife Service (here after FWS) web site (<http://montanafieldoffice.fws.gov>) on 02/19/2013. The FWS concurred with potential listed species distribution maps and resulting consultation areas for the KNF (FWS 2001). Species status in the influence area of the proposed project is shown in Table 2.

Table 2: Threatened, Endangered, and Proposed Wildlife Species: Project Area Status

SPECIES	ESA STATUS	STATUS IN ANALYSIS AREA*	COMMENTS**
Grizzly Bear ( <i>Ursus arctos</i> )	Threatened	Known to occur, last confirmed sighting in 2007.	Within BORZ polygon
Canada Lynx ( <i>Lynx canadensis</i> )	Threatened	Not suspected to occur as residents, unlikely as transients. Suitable habitat exists. No critical habitat present.	Units proposed above 4,000 ft. elevation

\*Status and \*\*Comment Key:

K = This species is known to occur within the project area.

S = Suitable habitat exists and species is suspected to occur within project area.

NS = No Suitable habitat, species is not suspected to occur within the project area. No further analysis required.

## GRIZZLY BEAR

### Data Sources, Methods, Assumptions, Bounds of Analysis

Grizzly bear population ecology, biology, habitat description and relationships identified by research are described in USFWS (1993), the annual progress reports for the Cabinet-Yaak grizzly bear research (Kasworm et al. 2000-2009), Kasworm and Servheen (1995), Kasworm and Their (1990-1994), Kasworm and Manley (1988), Kasworm and Brown (1984), and Kasworm 1984-1986. That information is incorporated by reference. Grizzly bear occurrence data comes from recent District wildlife observation records, Forest historical data (NRIS FAUNA), and other agencies (USFWS, MFWP).

The grizzly bear is one of two subspecies of the brown bear (*Ursus arctos*) which occupy North America. Coloration varies from light brown to almost black. Grizzly bears are generally larger than black bears (*Ursus americanus*), ranging between 200 and 600 pounds (lbs), and can be distinguished from them by longer, curved claws, humped shoulders, and a more concave face. Although relatively long-lived (20-25 years in the wild), the grizzly bear has a low reproductive rate due to the late age of first reproduction (4-7 years), small litter size (two cubs), long intervals between litters (three years), and limited cub survival (less than 50 percent).

Grizzly bears are year-round residents of the coniferous forests of northwestern Montana. They are habitat generalists that use a wide variety of habitats, generally dictated by food availability and distribution. Most areas currently inhabited by the species are represented by contiguous, relatively undisturbed mountainous habitat exhibiting high topographic and vegetative diversity. Because grizzly bears have large home ranges, large areas of habitat are required. Home range sizes vary, and the home ranges of adult bears frequently overlap. Grizzly bears occupy



low-elevation riparian areas, snow chutes and meadows in the spring and late fall, and move up to higher sub-alpine forests in the summer, early fall and winter. In the Cabinet Mountains, use of spring range occurs mostly below 5,200 feet in southerly facing snow chutes, alder shrub fields, grassy hillside parks, and closed timber (Kasworm et al. 2009). Natural caves or excavated dens, often above 6,000 feet, are entered after the first snowfall and occupied for four to five months. A majority of their diet is comprised of vegetation (forbs, sedges, grasses, roots, berries, pine nuts), but also includes fish, rodents, ungulates and insects. Berry production (huckleberries, buffaloberries, serviceberries and mountain ash berries) is an important late summer and fall food source. A more complete discussion of the biology and ecology of this species may be found in the 1993 Grizzly Bear Recovery Plan (Recovery Plan) (USFWS 1993).

Originally distributed in various habitats throughout North America from central Mexico to the Arctic Ocean, grizzly bears were thought to number approximately 50,000 in the early 1800s. However, westward human expansion and development during the 1800s led to a rapid reduction of grizzly bear populations. Bear numbers and distribution in the lower 48 States dropped precipitously during this period, due to a combination of habitat deterioration, commercial trapping, unregulated hunting, and livestock depredation control. On July 28, 1975, the grizzly bear was listed as threatened in the conterminous U.S., at which time the species occupied less than two percent of its former range south of Canada and was distributed in five small populations totaling an estimated 800-1,000 bears (USDI Fish and Wildlife Service 1975). The five remaining self-perpetuating or remnant populations occurred primarily in mountainous regions, national parks and wilderness areas of Washington, Idaho, Montana and Wyoming.

The analysis boundary for direct, indirect, and cumulative project impacts to individuals and their habitat is the Clark Fork grizzly bear outside the recovery zone reoccurring use polygon (BORZ polygon, Figure 2). This polygon includes the Elk, Pilgrim, and Marten Creek physiographic areas on the Cabinet Ranger District. There have been several sightings and incidents involving grizzly bears within this area since 2001 (described in greater detail below).

This is the appropriate boundary for the analysis of effects because there is no evidence to suggest that impacts related to the Pilgrim Creek project will affect any other individual or population of grizzly bears. The Clark Fork BORZ polygon is separated from the Cabinet/Yaak Grizzly Bear Ecosystem by the Noxon and Cabinet Gorge Reservoirs, Montana State Highway 200, and Montana Rail Link railroad tracks, as well as private property. There is also no evidence of a resident population of grizzlies south of the Clark Fork BORZ on the west side of the reservoirs.

Grizzly bear BORZ polygons were initially identified in 2002 (Wittinger et al. 2002). At that time USFWS identified three factors falling under Forest Service jurisdiction that contribute to "taking" (ESA Section 9) of grizzly bears that apply in these areas. They are: 1) access management; 2) food attractants (human and livestock food storage and garbage); and 3) livestock presence.

### **Affected Environment/Existing Condition**

Documented bear activity in the BORZ polygon began in 2001 when a grizzly sow was found dead along the railroad tracks east of Heron, MT. The next spring (2002), three subadult grizzly bears were trapped by USFWS personnel near Heron. The bears were relocated to the Elk Creek and Marten Creek drainages. The female grizzly was found dead in 2002. The 2 male bears have not been heard from since. In 2007, residents east of Noxon, MT reported a grizzly sow with 2 cubs in the area. The bears were trapped by USFWS personnel and relocated to upper Marten Creek. Within a few weeks the bears returned to Noxon and then crossed the



reservoir and entered the Cabinet-Yaak Recovery Zone. During the summer of 2009, two female grizzly bears were captured in the Northern Continental Divide Recovery Zone and moved to the Cabinet-Yaak Recovery Zone as part of an ongoing population augmentation program. By early fall, the two bears were traveling together and had moved south of Noxon Reservoir. One of the bears was shot by a homeowner in their yard. The other sow died when it was hit by a train. During 2008 and 2009, USFWS conducted a hair snagging survey in the Bitterroot Mountains that included the Clark Fork BORZ. That survey did not document the presence of any grizzly bears in the Clark Fork BORZ (Servheen and Shoemaker 2010).

Access management standards for the Clark Fork BORZ are identified in the Supplemental Kootenai, Idaho Panhandle and Lolo National Forests Land and Resource Management Plans Amendment for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones (UDSAFS 2011). The access management baseline conditions for the Clark Fork BORZ polygon are 177 miles of open motorized routes and 256 miles of total motorized routes.

Livestock allotments are not present in the Clark Fork BORZ polygon.

Food attractants are not available to bears in the Clark Fork BORZ polygon. The Forest has a food storage order in place and there are no dumpsters or other trash facilities present at campgrounds or dispersed sites. The Marten Creek Campground has several food storage boxes available at present, though not all sites are yet equipped.

## Environmental Consequences

Table 3 summarizes effects to incidental take parameters applicable outside the recovery zone.

Table 3: Changes to Incidental Take Parameters by Alternative for the Clark Fork BORZ Polygon

Incidental Take Parameter	Existing Condition	During Activities	After Completion of Sale Activities
Open Motorized Routes <sup>1</sup>	177 mi.	177 mi.	177 mi.
Total Motorized Route <sup>2</sup>	256 mi.	260.7 mi.	256 mi.
Livestock	None present	No Change	No Change
Food Attractants	None present	No Change	No Change

<sup>1</sup> includes open roads and motorized trails

<sup>2</sup> includes open roads, restricted roads, and motorized trails

## Direct and Indirect Effects

Existing conditions in the Clark Fork BORZ have reduced habitat effectiveness on 39,115 acres due to disturbance from existing point source disturbances, such as human use on currently open roads. This leaves 62,570 acres of undisturbed habitat, 14,000 acres of which is in Inventoried Roadless Areas.

Under the proposed action new roads will be constructed. Additionally, existing roads that currently have gates or earth barriers in place will be used to access harvest units. All new and

currently restricted roads used for the project will be closed to the public with a gate for the life of the project. While the project is active only administrative use will occur on the roads (FS personnel and government contractors). Upon completion of project-related activities all of the previously restricted and new roads used for the project will be closed with a permanent closure device (earth berm, rocks, reclamation) and closure order. There will be no public access on the new and currently restricted roads in the project area. Increases in linear miles of Total Road will be temporary. Upon completion of project-related activity, linear miles of open and total road will return to baseline conditions.

#### Effects of Timber Harvest Activities (includes felling through loading)

The point source disturbances from timber harvest actions may temporarily disturb grizzly bears while the project is active. There is potential for displacement but will not occur across the entire project area for the life of the project. Displacement will likely occur when harvest activity is occurring in the units, resulting in a disturbance that moves around the project area. Secure, undisturbed habitat is available in roadless areas and adjacent drainages with road systems that are closed to motorized travel during the active bear year (Rice Draw, Deer Creek, etc.) See Table 4 for display of the number of acres of potentially reduced habitat quality due to point source disturbance. Secure habitat is available within Inventoried Roadless Areas within the Pilgrim PSU and the Elk Creek and Rice Draw drainages.

Table 4. Number of Acres impacted by point source disturbance.

Alternative	Number of Acres
Proposed Action	1,176

#### Effects of Road Construction and Use (includes hauling and all other types of road use)

Grizzly bears may be temporarily displaced from habitat adjacent to roads during hauling on new or previously closed roads. This displacement will last for the life of the project. Post-project road management status will return to the baseline conditions. Previously restricted (gated roads) will remain gated and new roads constructed for the project will be made impassable to motorized vehicles. See Table 5 for the number of acres of potentially reduced habitat quality due to motorized activity. Secure habitat is available within Inventoried Roadless Areas within the Pilgrim PSU and the adjacent Elk Creek.

Table 5. Number of Acres impacted by road construction and use.

Alternative	Number of Acres
Proposed Action	822

The proposed project would not change the livestock situation in the impacts BORZ polygon.

The food attractant situation would not change with implementation of the proposed action.

### Cumulative Effects

Continual development of private land in the Clark Fork valley is expected. Although considered unsuitable for grizzly bear occupancy and outside of the identified BORZ, these private lands can contribute to the risk of grizzly bear mortality if landowners do not properly dispose of trash and manage pet and/or livestock food sources. Any additional cumulative effects to grizzly bears would be partially dependent on the duration (seasonal versus year-round) of use of



these parcels and homes. Anticipated effects include displacement, habitat alteration, and/or habitat loss. Many of the activities that may occur on the private property parcels can only be estimated and are outside of the control of the Forest Service.

It is reasonable to assume that some corresponding increase in human use of National Forest System lands is likely to occur over time. This increase is likely to be gradual and tend to be focused on areas along or near roads open to motorized traffic. Bears may, over time, experience more frequent disruption of their daily activities if they are in proximity to roads. The relationship of this project to increased recreational use of the area centers on the potential for illegal shooting of grizzlies. It is reasonable to assume that loss of cover from this project coupled with increased recreational use may increase mortality risk. The rate of increase in recreation in the area has been modest thus far. By the time there is a noticeable increase in recreationists the harvest units treated under this project will have recovered and will likely provide security cover.

Based on the nature and magnitude of potential cumulative effects to bears independent of this project, there are no cumulative effects anticipated that would change the effects determination to grizzly bears from implementation of the proposed federal action.

### **Regulatory Consistency**

The project is in compliance with ESA. This statement is based on: 1) Project meets all terms and conditions established by FWS (2010). 2) Consultation with FWS completed.

### **Statement of Findings**

The proposed action *is not likely to adversely affect* the grizzly bear. This determination is based on: 1) no permanent change to miles of total or open road in the Clark Fork BORZ polygon, 2) temporary roads constructed for the project will be restricted to the public, 3) Suitable secure habitat exists within and adjacent to project area, 4) there is the potential for temporary displacement, 5) No change to livestock or food attractant situation.

## **CANADA LYNX**

### **Data Sources, Methods, Assumptions, Bounds of Analysis**

Canada Lynx (*Lynx canadensis*) are medium-sized cats with large feet adapted to walking on snow, long legs, tufts on the ears and black-tipped tails (Ruediger et al. 2000). Snowshoe hare are the primary prey of lynx, comprising the majority of their diet throughout most of their distribution, especially in the winter. Female lynx select mature, dense forest habitats with lots of down woody debris, for example jack-strawed logs, to provide security and thermal cover (Ruggiero et al. 1994, Koehler 1990).

Detailed lynx population ecology, biology, and habitat description and relationships are described in Ruggiero et al. (2000) and Ruediger et al. (2000). These provide guidance in evaluating potential habitat and potential effects to lynx, and are incorporated by reference. In addition, the final lynx listing rule (Clark 2000) gives population and habitat status on a national scale. The most recent lynx distinct population segment status is found in the Biological Opinion on the effects of the Northern Rocky Mountains NRLMD (USFWS 2007c). Lynx occurrence data comes from Forest historical records (NRIS Fauna), and other agencies (MNHP, MFWP, USFWS).



The Final EIS for the Northern Rockies Lynx Management Direction (NRLMD) was completed in March 2007 with the ROD signed March 23, 2007. This decision amends the 1987 Kootenai Forest Plan by providing lynx habitat management objectives, standards and guidelines. The decision replaces the interim application of the Lynx Conservation Assessment and Strategy (LCAS). The direction provided in the NRLMD is applied to lynx habitat at the lynx analysis unit (LAU) scale. The KNF has delineated 47 LAUs which approximate a lynx home range size. Forest-wide lynx habitat has been updated to reflect the lynx habitat terminology from the NRLMD.

The effects analysis follows the standards and guidelines established in the NRLMD. *Only the standards and guidelines applicable to the proposed project are analyzed, and they are only applied to lynx habitat on Federal lands (in compliance with the ROD).* Those considered but found "not applicable" are found in the project file. Lynx habitat, in impacted LAUs, was mapped using the timber stand database version of the Kootenai National Forest model. Connectivity was evaluated by visually examining lynx habitat and past management activities to determine possible movement areas and potential areas where lynx travel may be hindered. Ridge lines and draws were considered high value movement areas.

The scale for direct effects analysis is the impacted LAU(s) and for indirect effects it is the impacted LAUs, and adjacent LAUs for connectivity effects. These scales of analysis are appropriate because impacts associated with the project will be localized and limited to the LAU in which the project occurs.

### **Affected Environment/Existing Condition**

On March 24, 2000 the U.S. Fish and Wildlife Service (USFWS) listed the contiguous U.S. distinct population segment of the Canada lynx as Threatened (Clark 2000). National population and habitat status descriptions in that document are incorporated by reference. There are no occurrences of lynx found in the historical records that are within the Pilgrim Creek planning sub-unit (PSU).

On February 28, 2008 the USFWS issued a proposed rule revising critical lynx habitat. Then, on February 25, 2009, the USFWS issued their final rule in the Federal Register (Vol. 74, No. 36; pp 8615-8702) to revise the critical habitat designation for the lynx in the United States. The proposal delineates lynx critical habitat units and subunits across the lower 48 states from Maine to Washington. Based on these maps, the Pilgrim Creek Project does not fall within critical lynx habitat. It is not within Northern Rocky Mountains (NRM) Critical Habitat Unit #3 (Fed. Reg. 2008; Vol. 73, No.40). A July 28, 2010, ruling remanded this designation back to the USFWS for further consideration while keeping the original 2009 designations in place. The USFWS has been instructed by the courts to reanalyze areas in National Forests considered to be currently unoccupied for potential inclusion as designated critical habitat. There is no critical habitat identified within the project area, nor is there any designated on the entire Cabinet Ranger District.

In addition to the critical habitat delineation, the proposal of the Fish and Wildlife Service also identified the primary constituent element for lynx, defined as: "boreal forest landscapes supporting a mosaic of differing successional forest stages," containing the following sub-elements: snowshoe hares and their preferred habitat, adequate winter snow conditions, denning habitat with abundant coarse woody debris, and 'matrix' habitat which facilitates lynx movement and dispersal by connecting areas of suitable habitat.

Currently, all LAUs meet the NRLMD standards (USDA Forest Service 2011). Lynx habitat in the impacted LAU was modeled in terms consistent with the NRLMD (see Figure 3). Table 6 displays the current lynx habitat conditions in the PSU.

District files contain no occurrences of lynx within the Pilgrim planning sub-unit (PSU). Surveys conducted for lynx include 595 camera nights of remote camera carnivore survey and winter track surveys. No lynx have been detected in or near the Pilgrim Creek drainage in at least the last 20 years. The project area was not designated critical habitat because it is not occupied by Canada lynx. It contains habitat which is considered suitable for lynx despite the lack of recent evidence of use. The lack of use cannot be attributed to any specific cause with any degree of certainty, but anecdotal information (Squires, pers. comm.) suggests that there is a strong negative correlation between red cedar climax communities and lynx occurrence, and that lynx are notably absent in Pacific maritime climates. There has been only one verified detection of lynx on the Cabinet Ranger District since at least 1997, that being a single instance of tracks in the Snake Pass area in 1998, approximately eight miles north of the project area across the Clark Fork River. Lynx are not suspected to occur in the project area based on a lack of reports of occurrence and Pacific maritime influences on snow conditions and climate.



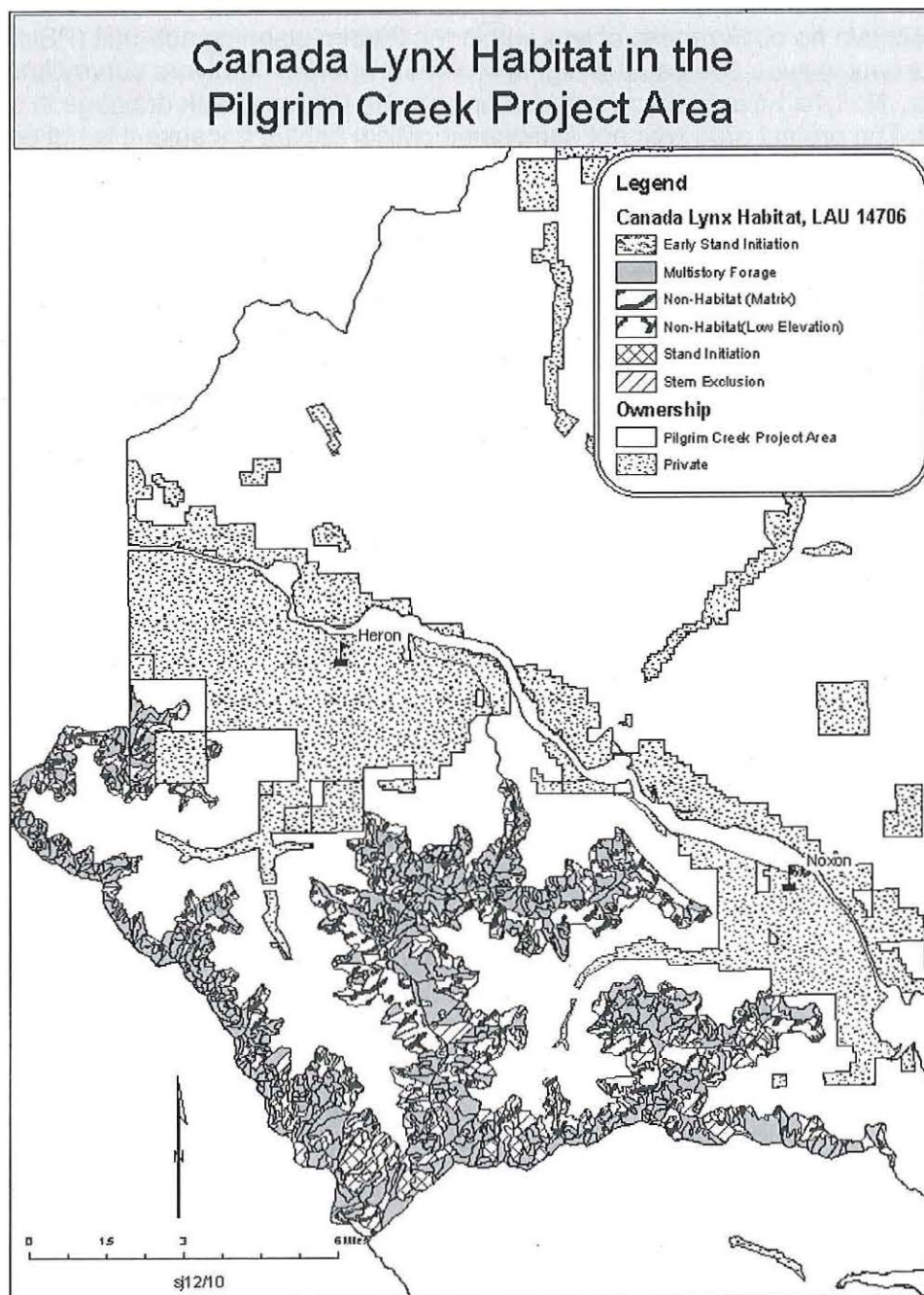


Figure 3.

**Table 6: Snowshoe hare / Lynx Habitat Condition by LAU in the Pilgrim PSU – Analysis Level 1**

LAU	Total Lynx Habitat In LAU Acres	Unsuitable Habitat Acres (%) <sup>1</sup> Std Veg S1	Habitat Changed to Unsuitable Over past 10 years by timber management with regeneration harvests Acres (%) <sup>2</sup> : Std Veg S2	Number of adjacent LAUs that exceed 30% lynx habitat in an unsuitable condition: Std Veg S1
140706	19,028	159 (0.8%)	0 (0%)	0

<sup>1</sup> these acres are lynx habitat that currently do not provide sufficient vegetation quantity or quality (height) to be used by snowshoe hare and lynx in the winter. No additional regeneration harvest allowed if more than 30% of lynx habitat in an LAU is in a stand initiation structural stage that does not provide winter snowshoe hare habitat.

<sup>2</sup> percent is the percent of total LAU acres that provide lynx habitat (suitable + unsuitable acres). No more than 15% of lynx habitat on NFS lands in an LAU may be changed by regeneration harvest in a 10 year period.

**Table 7: Snowshoe hare / Lynx Habitat within LAUs in the Pilgrim PSU – Analysis Level 2**

LAU Name / number	LAU Total Acres	Total Lynx Habitat Acres	Stand Initiation (winter forage) Acres <sup>1</sup> (% of lynx habitat)	Early Stand Initiation (summer forage only) Acres <sup>2</sup> (% of lynx habitat - unsuitable): Std Veg S1	Multistory (forage) <sup>3</sup> Acres (% of lynx habitat)	Other <sup>4</sup> (non-forage) Acres (% of lynx habitat)
Elk/Pilgrim 14706	30,893	19,028	1,230 (6%)	159 (0.8%)	14,834 (78%)	2,805 (15%)

<sup>1</sup> Stand initiation structural stage that currently provides winter snowshoe hare habitat

<sup>2</sup> Stand initiation structural stage where the trees have not grown tall enough to protrude above the snow in winter – Unsuitable Habitat.

<sup>3</sup> Multistory structural stage with many age classes and vegetation layers that provide snowshoe hare habitat.

<sup>4</sup> Other: Stem Exclusion Structural Stage and includes 1) Closed canopy with understory limited; 2) Multistory structural stage with many age classes and vegetation layers that do not provide snowshoe hare habitat (dry Douglas fir stands); 3) Stands where management has not occurred and no data is available.



There are no identified linkage corridors (USDA Forest Service 2004: Figure 1-1; KNF Lynx Taskforce 1997: 6) in the Pilgrim PSU or potentially impacted LAUs or adjacent LAUs.

## **Environmental Consequences**

### **Direct and Indirect Effects**

*Objectives, Standards and Guidelines applicable to ALL management projects in lynx habitat*

**Objective ALL 01:** Maintain or restore lynx habitat connectivity in and between LAUs and in linkage areas.

There are no activities proposed in areas that provide connectivity or linkage, therefore this guideline does not apply.

**Standard ALL S1:** New or expanded permanent development and vegetation management projects must maintain habitat connectivity in and LAU and/or linkage area.

This standard is met because this project will maintain habitat connectivity within the impacted LAU. Connectivity with other LAUs is good to the south and west, but poor in other directions due to the presence of Noxon Rapids and Cabinet Gorge Reservoirs, private land, a state highway, and a railroad line.

There are no identified linkage corridors (USDA Forest Service 2004: Figure 1-1; KNF Lynx Taskforce 1997: 6) in or adjacent to the Planning sub-unit or potentially impacted LAUs.

**Guideline ALL G1:** Methods to avoid or reduce effects on lynx should be used when constructing or reconstructing highways or forest highways across federal land. Methods could include fencing, underpasses or overpasses.

There is no highway or forest highway construction or reconstruction activities planned, therefore this guideline does not apply.

**Standard LAU S1:** Changes in LAU boundaries shall be based on site-specific habitat information and after review by the Forest Service Regional Office.

No changes in LAU boundaries are proposed, therefore this standard does not apply.

*Objectives, Standards and Guidelines applicable to vegetation management projects in lynx habitat within LAUs*

**Standard VEG S1:** If more than 30 percent of the lynx habitat in an LAU is currently in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat, no additional habitat may be regenerated by vegetation management projects.

Exception: Fuel treatment projects in the WUI, as defined by HFRA, subject to the following limitation – fuel treatment projects in the WUI that do not meet Standards VEG

S1, S2, S5 and S6 shall occur on no more than 6 percent (cumulatively) of lynx habitat on each National Forest. In addition, fuel treatment projects may not result in more than three adjacent LAUs exceeding this standard. For fuel treatment projects in the WUI, see guideline VEG G10.

See Table 8 for how the impacted LAU meet or exceed the 30% standard.

**Table 8. Snowshoe hare / Lynx Habitat within LAUs in the Pilgrim PSU – Analysis Level 1**

LAU	Existing Condition	Preferred Alternative
14706	159 acres (0.8%)	677 (4%)

**Table 9: Snowshoe hare / Lynx Habitat within LAUs in the Pilgrim PSU – Proposed Action Analysis Level 2**

LAU Name / number	LAU Total Acres	Total Lynx Habitat Acres	Stand Initiation (winter forage) Acres <sup>1</sup> (% of lynx habitat)	Early Stand Initiation (summer forage only) Acres <sup>2</sup> (% of lynx habitat - unsuitable): Std Veg S1	Multistory (forage) <sup>3</sup> Acres (% of lynx habitat)	Other <sup>4</sup> (Stem exclusion; multistory non-feeding) Acres (% of lynx habitat includes stands with no data)
Elk/Pilgrim	30,893	19,028	1,230 (6%)	836 (4%)	14,341 (75%)	2,621 (14%)

<sup>1</sup>Stand initiation structural stage that currently provides winter snowshoe hare habitat

<sup>2</sup>Stand initiation structural stage where the trees have not grown tall enough to protrude above the snow in winter.

<sup>3</sup>Multistory structural stage with many age classes and vegetation layers that provide snowshoe hare habitat.

<sup>4</sup>Other – Stem Exclusion Structural Stage – Closed canopy with understory limited; Multistory structural stage with many age classes and vegetation layers that do not provide snowshoe hare habitat; stands where management has not occurred and no data is available.

The proposed activities would the existing level of lynx habitat not providing snowshoe hare winter habitat in the Elk/Pilgrim LAU. In LAU 14706, 677 acres would be converted to unsuitable for winter snowshoe hare habitat by the proposed action. This does meet the standard.

**Standard VEG S2:** Timber management projects shall not regenerate more than 15 percent of lynx habitat on NFS lands within a LAU within a 10-year period. The same exception described in standard VEG 01 for fuels projects in the WUI applies to this standard.

This standard is met in all affected LAUs. Table 10 provides a comparison of how the impacted LAU complies with this standard.



Table 10. Regeneration Harvest in Lynx Habitat in the last 10 years in Impacted LAUs

LAU	Existing Condition Acres (%)	Alt. 3
14706	0 (0%)	560 (3%)

**Standard VEG S5:** Pre-commercial thinning projects that reduce snowshoe hare habitat may occur from the stand initiation structural stage until the stands no longer provide winter snowshoe hare habitat only for the following exceptions:

1. Within 200 feet of administrative sites, dwellings, or outbuilding; or
2. For research studies or genetic tree tests evaluating genetically improved reforestation stock; or
3. Based on new information that is peer reviewed and accepted by the regional level of the Forest Service and state level USFWS, where a written determination states:
  - a. that a project is not likely to adversely affect lynx; or
  - b. that a project is likely to have short term adverse effects on lynx or its habitat, but would result in long term benefits to lynx and its habitat; or
4. For conifer removal in aspen, or daylight thinning around individual aspen trees, where aspen is in decline; or
5. For daylight thinning of planted rust-resistant white pine where 80% of the winter snowshoe hare habitat is retained; or
6. To restore whitebark pine.

**Exceptions 2 through 6 shall only be utilized in LAUs where standard VEG S1 is met.**

This standard is met because the project does not include any precommercial thinning in lynx habitat.

**Standard VEG S6:** Vegetation management projects that reduce snowshoe hare habitat in multi-story mature or late successional forests may occur only:

1. Within 200 feet of administrative sites, dwellings, outbuildings, recreation sites, and special use permit improvements, including infrastructure within permitted ski area boundaries; or
2. For research studies or genetic tests evaluating genetically improved reforestation stock; or
3. For incidental removal during salvage harvest (e.g. removal due to location of skid trails).

**Exceptions 2 and 3 shall only be utilized in LAUs where standard VEG S1 is met.**

Note: Timber harvest is allowed in areas that have potential to improve winter snowshoe hare habitat but presently have poorly developed under stories that lack dense

horizontal cover (e.g. uneven aged management systems could be used to create openings where there is little under story so that new forage can grow).

Timber harvest is proposed in stands identified as multi-story forage lynx habitat by the Kootenai National Forest Lynx Habitat model (Table 11). Horizontal Cover surveys (Bertram and Claar 2008) conducted in the stands demonstrates that all stands proposed for harvest do not meet the standard for suitable snowshoe hare habitat (see Appendix 3). Timber harvest and post-harvest burning will move these stands back to an early stand initiation stage and result in a dense understory of seedlings and shrubs in approximately 10 years that will provide suitable winter snowshoe hare habitat. The snowshoe hare habitat created by these vegetation treatments will be located with the matrix of potential Canada lynx denning habitat.

Table 11: Multi-story mature or late succession forest snowshoe hare habitat impact summary

ALT #	LAU #	Acres of multi-story mature and late successional forests	Acres of vegetation management	Exception(s) applied	Is standard VEG S1 being met (Y/N)
Preferred Alternative	14706	14,834	493	No	Yes

#### **Objectives VEG 01, 02, 03, 04:**

The proposed project meets VEG 01, VEG 02, and VEG 04 by maintaining habitat components for lynx in stands where they currently exist. The stands proposed for treatment under this project currently do not have the horizontal cover necessary to support populations of snowshoe hare. The Treatments proposed will promote the development of a vigorous understory, more suitable for hares. VEG 03 does not apply to this project.

#### **Guidelines VEG G1, G4, G5, G10 and G11**

Guideline VEG G1 is met by the Pilgrim Creek Project because treatment will occur in stands that are currently in the stem exclusion phase of development. They have a closed canopy and generally a depauperate understory. The proposed vegetation treatment will result in the development of an understory more suitable for snowshoe hare.

There will be no permanent travel routes or firebreaks created as a result of the prescribed burning associated with this project, VEG G4 is met. Habitat for other lynx prey species is maintained in the project area and the LAU, VEG G5 is met. This project is not an HFRA project, VEG G10 does not apply.

Denning habitat does not appear to be lacking in LAU 14706, VEG G11 is met. Much of the LAU (14,000 acres) is in one of two Inventoried Roadless Areas (Lone Cliff Smeads and Huckleberry Mountain). Inventoried Roadless Areas are largely unmanaged and root rot and lodgepole pine mortality is widespread, therefore large woody debris should be common.

#### **Cumulative Effects**

There are no state, tribal, local or private actions that are reasonably certain to occur in the action area. A list of cumulative activities considered for their potential effects to listed species is contained in Appendix II.



The proposed action, in combination with the existing condition and reasonably foreseeable actions (see list provided earlier) would not result in cumulative changes in or loss of lynx habitat. The affected LAUs would meet the NRLMD standards and guidelines.

### **Regulatory Consistency**

- The project complies with Forest Plan direction on T&E species that applies to the Lynx (Vol. 1, II-1 #7, II-22) and the NRLMD.
- The project is consistent with the Endangered Species Act as evidenced through consultation with the USFWS and receipt of concurrence.

### **Northern Rockies Lynx Amendment Standards and Guidelines applicable to project**

<b>Standards and Guidelines</b>	<b>Compliance</b>
Standard VEG S1	Complies
Standard VEG S2	Complies
Standard VEG S5	Complies
Standard VEG S6	Complies with allowance for timber harvest in areas with poor snowshoe hare habitat (lack of dense horizontal cover).

### **Terms and conditions from the biological opinion on the effects of the Northern Rocky Mountains Lynx Amendment on Canada Lynx applicable to project**

<b>Term and Condition</b>	<b>Compliance</b>
Fuels management projects conducted under the exemptions from standards VEG S1, S2, S5 and S6 in occupied habitat shall not occur in greater than 6% of lynx habitat on any Forest	Does not apply, this is not a fuels management project and does not use any of the exemptions.
Fuels management projects conducted under the exemptions from standards VEG S1, S2, S5 and S6 in occupied habitat shall not result in more than 3 adjacent LAUs not meeting the VEG S1 standard of no more than 30 percent of an LAU be in stand initiation structural stage.	Does not apply; all LAUs currently exceed (better than) this 30% standard.
In occupied lynx habitat, precommercial thinning and vegetation management projects allowed per the exception listed under VEG S5 and S6, shall not occur in any LAU exceeding VEG S1, except for protection of structures.	Does not apply; see previous T&C.

### **Statement of Findings**

The proposed action **may affect, but is not likely to adversely affect** the lynx. This determination is based on: 1) 677 acres (4%) of LAU converted to the early stand initiation stage, 2) 560 acres (3%) of LAU will receive regeneration harvest, (3) no precommercial thinning included in project, (4) 493 acres of harvest in stands that cover surveys demonstrate do not meet standards for lynx. Additionally, lynx presence has not been confirmed on the Cabinet Ranger District since 1998. Habitat manipulation that has the potential to increase snowshoe hare foraging habitat could increase local hare populations that may benefit any transient lynx that could happen through. Snow conditions will likely continue to limit habitat quality for lynx in this area.

The proposed federal action will not affect designated Canada lynx critical habitat.

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## **Appendix I: Record of Consultation with the U.S. Fish and Wildlife Service**

12/16/2010

Doug Grupenhoff (Cabinet RD, Fish, Wildlife, Watershed Staff Officer) and I (Steve Johnsen, (Cabinet RD, Wildlife Biologist) called Ben Conard (USFWS Consultation Biologist, Creston MT.) to discuss the Pilgrim Creek Project.

### **Grizzly Bear**

Temporary increases in total and open road density okay, but must return to baseline post-project, either make new roads impassable or close existing roads prior to activity if you want to keep new roads open. Adding to an existing gated road increases total road length, must barrier new section or barrier entire road.

Discuss timing with Marten creek sales

Lynx – sounds okay

Wolverine – do not need to do anything additional

## Appendix II: Activities and Projects Considered

Table 1 displays present and foreseeable activities/projects and how their effects were considered in relation to the proposed project.

Table 1: Present and Foreseeable Activities/Projects considered

Activity/Project name	Project Considered as: Present/Future	Effects Considered as: Existing/Cumulative	Species Affected	Status and/or Completion Date
Public Use	Both	Existing	1,2	Ongoing
Livestock grazing	Both	Existing	1,2	Ongoing
Road Management	Both	Both	1,2	Ongoing
Fire suppression	Both	Both	1,2	Ongoing
Special Uses	Both	Both	1,2	Ongoing
Recreation Mtce.	Both	Existing	1,2	Ongoing
Noxious weed treatment	Both	Both	1,2	Ongoing
Private Land Actions	Both	Cumulative	1,2	Ongoing
Marten Creek T. S.	Present	Cumulative	1,2	Ongoing, harvest activities complete.

1 - Grizzly 2 - Lynx

Other forest product activities occurring on an annual basis are the gathering of pine cones, boughs, and Christmas trees. These activities occur throughout the District, and have little-to-no effect on T&E species habitat due to their short term nature, limited vegetation disturbance and generally no motorized vehicle access on closed roads.

*Public Use* - Recreation use (camping, hunting, hiking, berry picking, firewood cutting etc.) would continue to occur on public land. Although typically minor in effect, these activities have the potential to displace and / or increase the mortality risk to all the threatened and endangered species occurring on the District. Therefore to assist in avoiding a cumulative increase in mortality risk from public access on normally restricted roads, contractors would be required to prevent public access while conducting activities on restricted roads.

*Cattle Grazing* – When cattle and horses are present, there is always the potential for bear caused livestock mortality. In turn, any livestock mortality could result in mortality to individual bears or wolves via management removal. However, due to the level of displacement anticipated and the scheduling of activities which keep large portions of the District free of activity, the proposed project is not expected to increase this potential.

*Road Management* – Routine road maintenance and administrative use are monitored and analyzed for direct effects on threatened and endangered species. For instance, restricted roads on the District are monitored, and administrative use is limited based on current policies. No additional effects due to the activities proposed with this project, and ongoing administrative activities, are anticipated since administrative use is typically minimal and random in occurrence.



*Fire Suppression* – Opening restricted roads and constructing fire lines, helispots, and safety zones could affect habitat for the grizzly bear, and may temporarily displace threatened and endangered species in specific areas of the District if a wildfire occurs. The timing and extent of these effects cannot be predicted, thus they will be analyzed in the event of a wildfire and the District will initiate the emergency consultation process at that time.

*Special Uses* – The effects of special use permits are analyzed for impacts on threatened and endangered species at the time of granting the permit. No existing permits would add to the effects proposed under this planning document. The current use levels of outfitters and guides (13 permitted consumptive permits on the District) would remain unchanged. Hunting guides / outfitters must adhere to permit requirements for legal game, proper food storage, refuse disposal etc. and to date no problems on the District, as related to listed species mortalities, has occurred. Non-consumptive permit types include hiking, horseback riding, rock climbing, sight-seeing, photography, and mountain biking, however the use levels are currently low. Winter permitted activities are very limited with only 1 permitted snowmobile grooming trail in the project area.

*Recreation Maintenance* – Routine maintenance of trails, dispersed sites, and developed recreation sites occurs almost daily outside of winter. These activities would not lead to adverse effects on threatened or endangered species or their habitat because of the limited scale and amount of disturbance associated with these activities.

*Noxious Weed Treatment* – Weed treatment activities occur annually on the District. Based on the strict application levels and methods these activities would not lead to any adverse effects on threatened or endangered species or their habitat. Weed treatments actually benefit forage species important to threatened and endangered species or their prey (USDA Forest Service 1997, 30). Chemical weed treatments are not typically employed by the Forest Service in riparian habitat; therefore adverse effects on any listed plant species would be avoided.

*Private Property* – Any effects to threatened and endangered species will be partially dependent on the duration (seasonal versus year-round) of use of these parcels and any associated structures. Anticipated effects include species displacement, habitat alteration and/or habitat loss. Many of the activities that may occur on the private parcels can only be surmised but could certainly contribute to the environmental baseline condition or cumulative effects.

### Appendix III: Results of Lynx Cover Surveys

Unit	Stand	cover
6	713-02-062	27.3
	713-02-040	19.7
	713-02-053	10.9
8	717-05-020	16.7
	717-05-022	38.4
	717-05-023	36.8
10	717-05-023	31.9
10 and 10B	717-05-009	33.2
11	717-06-018	34.8
12	718-04-012	21.3
	718-04-007	13.9
12 and 16	718-04-011	10.0
19	718-04-044	9.5
	718-04-002	9.7
26 and 10B	717-05-010	24.2
	717-05-017	29.4
	717-05-016	17.5
29	719-05-007	23.3
	719-05-002	31.2
	719-05-008	17.8
30	719-06-014	26.2
32	717-06-007	19.8
36	719-02-004	16.7

Completed Sept. – Oct. 2010

Threshold horizontal cover value (Bertram and Claar 2008):

Summer: greater than or equal to 48% of measured horizontal cover

Winter: greater than or equal to 35% of measured horizontal cover



## Clarification of Canada Lynx Analysis for the Pilgrim Creek Timber Sale Project

On March 26, 2013, I returned a phone call to Katrina Dixon (USFWS, Section 7 consultation biologist) in response to her questions about the Pilgrim Creek Timber Sale Project Biological Assessment for Canada lynx. Her question was regarding Table 9 which shows a reduction in multistory forage acres in lynx habitat of 3%, from 78% of LAU to 75%.

The Pilgrim Creek project proposes timber harvest in potential lynx habitat. We conducted horizontal cover surveys (Bertram and Claar2008) in the stands proposed for treatment. Those surveys demonstrated that the stands did not meet the cover threshold necessary to serve as snowshoe hare habitat (summer cover values  $\leq 38.4$ ). Therefore, the proposed timber harvest will occur in the Other (stem exclusion; multi-story non-feeding) Acres of lynx habitat category, not in multistory forage habitat as displayed in the BA. Below is a corrected Table 9 that shows the results of the proposed action. There will be no reduction in multistory forage acres as a result of the Pilgrim Creek Project.

**Table 9: Snowshoe hare/Lynx Habitat within LAUs in the Pilgrim PSU-  
Proposed Action Analysis Level 2**

LAU Name/ number	LAU Total Acres	Total Lynx Habitat Acres	Stand Initiation (winter forage) Acres <sup>1</sup> (% of lynx habitat)	Early Stand Initiation (summer forage only) Acres <sup>2</sup> (% of lynx habitat–unsuitable): Std Veg S1	Multistory (forage) <sup>3</sup> Acres (%of lynx habitat)	Other <sup>4</sup> (Stem exclusion; multistory non-feeding) Acres (%of lynx habitat includes stands with no data)
Elk/Pilgrim 14706	30,893	19,028	1,230 (6%)	836 (4%)	14,834 (78%)	2,128 (11%)

<sup>1</sup>Stand initiation structural stage that currently provides winter snowshoe hare habitat.

<sup>2</sup>Stand initiation structural stage where the trees have not grown tall enough to protrude above the snow in winter.

<sup>3</sup>Multistory structural stage with many age classes and vegetation layers that provide snowshoe hare habitat.

<sup>4</sup>Other –Stem Exclusion Structural Stage- closed canopy with understory limited; multistory structural stage with many age classes and vegetation layers that do not provide snowshoe hare habitat; stands where management has not occurred and no data is available.

/s/ Steve Johnsen  
Wildlife Biologist



## Supplement to the Pilgrim Creek Project Biological Assessment

A Biological Assessment (BA) analyzing the potential effects of the Pilgrim Creek Project on grizzly bear and Canada lynx was completed and sent to the US Fish and Wildlife Service on February 20, 2013. The USFWS concurred with the findings of the BA on March 28, 2013. The BA omitted an analysis of the potential impacts to grizzly bears of the use of a helicopter to accomplish the prescribed burning. This supplement provides the analysis for that activity and follows the guidelines for prescribed burning in the Level 1 Programmatic Screens.

### DESCRIPTION OF PROPOSED ACTION

(Location, Purpose, and Activities of the Proposed Action)

The proposed federal action is Alternative 3 as described in the Pilgrim Creek Project Draft Environmental Impact Statement (DEIS). The detailed description from the DEIS is incorporated by reference.

The project is located on the Cabinet Ranger District of the Kootenai National Forest. It is approximately 10 air miles northwest of Trout Creek, Montana and falls within the Pilgrim Creek Planning Sub-unit (PSU), which includes the Pilgrim and Smeads Creek drainages. The project area is located in the Clark Fork Bears Outside of the Recovery Zone (BORZ) Polygon.

The proposed action is a timber sale that is designed to improve growing conditions, reduce stand densities, increase the proportion of root disease-resistant tree species, and increase age class diversity in lodgepole pine dominated communities. The project will also improve forage production and quality. Table 1 summarized the proposed activities. All new roads constructed for the project will be restricted from public use when they are constructed and will be decommissioned once the sale is complete.

Table 1: Proposed Activity Summary

<b>Project Activity</b>	<b>Acres/Miles</b>
Total acres in Analysis Area (Pilgrim PSU)	29,987
Total Treated Acres (% of PSU)	5,998 (20%)
Regeneration Harvest (clearcut, seedtree) (acres)	512
Shelterwood (acres)	366
Partial Cut (group selection, commercial thin) (acres)	591
Prescribed Fire (acres)	4,564
New Permanent Roads Constructed (miles)	4.7
Temporary Roads Constructed (miles)	1.1
Roads Reconstructed (miles)	47

## Effects of Prescribed Fire Activities in the Pilgrim Creek Project

Approximately 4,564 acres of prescribed ecosystem burning to improve forage quality and quantity is proposed for the Pilgrim Creek project area. The burning would occur in spring or fall, dependent on the moisture content of the fuel. The ignition of these units would be by hand or helicopter. If the latter tool is used, helicopter activities would not last more than two days in a unit and there would be no landings or refueling in the project area. The burn units are spread across the project area. Not all of the burn units would be ignited at once, due to effects on wildlife, watershed concerns, cost and limited resources of the fire crew to ignite and control numerous fires at once, and public concerns about smoke. It is estimated that the burn management proposal would take a decade to accomplish all of the targeted acres. The prescribed burns would vary from low to moderate severity, leaving a mosaic of burned and unburned areas. This would reduce ladder fuels and promote forage for bears and other big game. Similar to some timber harvest, fire can promote huckleberry growth and production. A grizzly bear in the area may be disturbed by burn activities, the fire and smoke. Once human activities are finished, and the fire or smoke abates, it is expected that bears and other wildlife would return to these areas relatively quickly. Stoen, et al. (2010) found that, when approached by researcher's helicopters, Brown bears decreased their speed and remained within similar habitat types and terrain. The movements were influenced only about two hours and did not influence the size of the activity areas.

Prescribed ecosystem burns would involve disturbance to bears or other animals from ignition activities, such as noise from a helicopter or human presence, smoke, heat, or any activity that could cause a bear in the vicinity to move away from the disturbing factor. All ignition activities would last no more than two days. This period is satisfactory for fire operations as it gives personnel a chance to observe fire behavior and adjust burn prescriptions for weather or fuel conditions. The effects of burning are expected to be from light to moderate intensity. Forage production and restoring fire frequency to the area would be the goals of the prescribed burns. The approximately 4,564 acres proposed for burning would be spread out over time (10 years) and space (project area is 29,987 acres).

Prescribed burn units vary in size, but the time frame to ignite each unit would be no more than two days. Burning would create short-term disturbance effects that would be relaxed almost immediately. The effects would be expected to disturb grizzly bears for no more than a brief period. Bears would be expected to utilize these areas rapidly after burning as grasses and forbs respond with a flush of young, palatable vegetation. Early successional habitats will remain attractive to bears until canopy closure and successional processes change forage composition and condition in the absence of other disturbance, but may provide benefits for as long as 50 years on some sites.

Fire will also be used to reduce slash concentrations after timber harvest. This burning would be accomplished by crews on the ground. Some units would have excess material piled and burned (481 ac.) or tops would be pulled to the landing and burned there. Piling is generally done in conjunction with harvest activities and burning occurs at a later time in either early spring or early fall. Some units will be harvested and the slash piled at a later date (at the contractor's discretion). An excavator piles about two acres of slash/day, and the time spent in a unit for such work depends on the size of the unit. In most units (598 acres) slash would be left in place and the unit would be broadcast burned. The degree of disturbance associated with



burning activities is much lower than harvest activities and would result in a commensurately lesser response from bears that may be using the area at that time. Intensity and duration of activities is low for burning, as most piles in a relatively large area can be ignited in a short amount of time, roughly a day for even several large units.


#### Cumulative Effects

There are no additional cumulative effects resulting from helicopter use associated with this project.

#### Statement of Findings

The use of helicopters to accomplish the prescribed burning associated with the Pilgrim Creek Project does not change the original finding of the BA. The proposed action *may affect, but is not likely to adversely affect* the grizzly bear. This determination is based on 1) helicopter activity will follow the guidelines in the Level 1 Programmatic Screens; few trips and  $\leq 2$  activities/year and  $\leq 2$  days/activity/analysis area per bear year, 2) there will be no landings within the project area, 3) the duration of the activity is short, 4) there will be no lingering effects.

There is no change to the findings for Canada lynx. The proposed action may affect, but is not likely to adversely affect the Canada lynx. The proposed federal action will not affect designated Canada lynx critical habitat.

  
District Wildlife Biologist

4/23/13  
Date

  
Supervisory Wildlife Biologist

4/23/13  
Date



## Clarification of Canada Lynx Analysis for the Pilgrim Creek Timber Sale Project

On March 26, 2013, I returned a phone call to Katrina Dixon (USFWS, Section 7 consultation biologist) in response to her questions about the Pilgrim Creek Timber Sale Project Biological Assessment for Canada lynx. Her question was regarding Table 9 which shows a reduction in multistory forage acres in lynx habitat of 3%, from 78% of LAU to 75%.

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/s/ Steve Johnsen  
Wildlife Biologist



## Supplement to the Pilgrim Creek Project Biological Assessment

A Biological Assessment (BA) analyzing the potential effects of the Pilgrim Creek Project on grizzly bear and Canada lynx was completed and sent to the US Fish and Wildlife Service on February 20, 2013. The USFWS concurred with the findings of the BA on March 28, 2013. The BA omitted an analysis of the potential impacts to grizzly bears of the use of a helicopter to accomplish the prescribed burning. This supplement provides the analysis for that activity and follows the guidelines for prescribed burning in the Level 1 Programmatic Screens.

### DESCRIPTION OF PROPOSED ACTION

(Location, Purpose, and Activities of the Proposed Action)

The proposed federal action is Alternative 3 as described in the Pilgrim Creek Project Draft Environmental Impact Statement (DEIS). The detailed description from the DEIS is incorporated by reference.

The project is located on the Cabinet Ranger District of the Kootenai National Forest. It is approximately 10 air miles northwest of Trout Creek, Montana and falls within the Pilgrim Creek Planning Sub-unit (PSU), which includes the Pilgrim and Smeads Creek drainages. The project area is located in the Clark Fork Bears Outside of the Recovery Zone (BORZ) Polygon.

The proposed action is a timber sale that is designed to improve growing conditions, reduce stand densities, increase the proportion of root disease-resistant tree species, and increase age class diversity in lodgepole pine dominated communities. The project will also improve forage production and quality. Table 1 summarized the proposed activities. All new roads constructed for the project will be restricted from public use when they are constructed and will be decommissioned once the sale is complete.

Table 1: Proposed Activity Summary

Project Activity	Acres/Miles
Total acres in Analysis Area (Pilgrim PSU)	29,987
Total Treated Acres (% of PSU)	5,998 (20%)
Regeneration Harvest (clearcut, seedtree) (acres)	512
Shelterwood (acres)	366
Partial Cut (group selection, commercial thin) (acres)	591
Prescribed Fire (acres)	4,564
New Permanent Roads Constructed (miles)	4.7
Temporary Roads Constructed (miles)	1.1
Roads Reconstructed (miles)	47

## Effects of Prescribed Fire Activities in the Pilgrim Creek Project

Approximately 4,564 acres of prescribed ecosystem burning to improve forage quality and quantity is proposed for the Pilgrim Creek project area. The burning would occur in spring or fall, dependent on the moisture content of the fuel. The ignition of these units would be by hand or helicopter. If the latter tool is used, helicopter activities would not last more than two days in a unit and there would be no landings or refueling in the project area. The burn units are spread across the project area. Not all of the burn units would be ignited at once, due to effects on wildlife, watershed concerns, cost and limited resources of the fire crew to ignite and control numerous fires at once, and public concerns about smoke. It is estimated that the burn management proposal would take a decade to accomplish all of the targeted acres. The prescribed burns would vary from low to moderate severity, leaving a mosaic of burned and unburned areas. This would reduce ladder fuels and promote forage for bears and other big game. Similar to some timber harvest, fire can promote huckleberry growth and production. A grizzly bear in the area may be disturbed by burn activities, the fire and smoke. Once human activities are finished, and the fire or smoke abates, it is expected that bears and other wildlife would return to these areas relatively quickly. Stoen, et al. (2010) found that, when approached by researcher's helicopters, Brown bears decreased their speed and remained within similar habitat types and terrain. The movements were influenced only about two hours and did not influence the size of the activity areas.

Prescribed ecosystem burns would involve disturbance to bears or other animals from ignition activities, such as noise from a helicopter or human presence, smoke, heat, or any activity that could cause a bear in the vicinity to move away from the disturbing factor. All ignition activities would last no more than two days. This period is satisfactory for fire operations as it gives personnel a chance to observe fire behavior and adjust burn prescriptions for weather or fuel conditions. The effects of burning are expected to be from light to moderate intensity. Forage production and restoring fire frequency to the area would be the goals of the prescribed burns. The approximately 4,564 acres proposed for burning would be spread out over time (10 years) and space (project area is 29,987 acres).

Prescribed burn units vary in size, but the time frame to ignite each unit would be no more than two days. Burning would create short-term disturbance effects that would be relaxed almost immediately. The effects would be expected to disturb grizzly bears for no more than a brief period. Bears would be expected to utilize these areas rapidly after burning as grasses and forbs respond with a flush of young, palatable vegetation. Early successional habitats will remain attractive to bears until canopy closure and successional processes change forage composition and condition in the absence of other disturbance, but may provide benefits for as long as 50 years on some sites.

Fire will also be used to reduce slash concentrations after timber harvest. This burning would be accomplished by crews on the ground. Some units would have excess material piled and burned (481 ac.) or tops would be pulled to the landing and burned there. Piling is generally done in conjunction with harvest activities and burning occurs at a later time in either early spring or early fall. Some units will be harvested and the slash piled at a later date (at the contractor's discretion). An excavator piles about two acres of slash/day, and the time spent in a unit for such work depends on the size of the unit. In most units (598 acres) slash would be left in place and the unit would be broadcast burned. The degree of disturbance associated with



burning activities is much lower than harvest activities and would result in a commensurately lesser response from bears that may be using the area at that time. Intensity and duration of activities is low for burning, as most piles in a relatively large area can be ignited in a short amount of time, roughly a day for even several large units.


#### Cumulative Effects

There are no additional cumulative effects resulting from helicopter use associated with this project.

#### Statement of Findings

The use of helicopters to accomplish the prescribed burning associated with the Pilgrim Creek Project does not change the original finding of the BA. The proposed action *may affect, but is not likely to adversely affect* the grizzly bear. This determination is based on 1) helicopter activity will follow the guidelines in the Level 1 Programmatic Screens; few trips and  $\leq 2$  activities/year and  $\leq 2$  days/activity/analysis area per bear year, 2) there will be no landings within the project area, 3) the duration of the activity is short, 4) there will be no lingering effects.

There is no change to the findings for Canada lynx. The proposed action may affect, but is not likely to adversely affect the Canada lynx. The proposed federal action will not affect designated Canada lynx critical habitat.

  
District Wildlife Biologist

4/23/13  
Date

  
Supervisory Wildlife Biologist

4/23/13  
Date



# United States Department of the Interior

## Fish and Wildlife Service

Ecological Services

Montana Field Office

585 Shepard Way, Suite 1

Helena, Montana 59601-6287

Phone: (406) 449-5225 Fax: (406) 449-5339



File: M19 Kootenai National Forest (I)

March 28, 2013

Paul Bradford, Forest Supervisor  
Kootenai National Forest  
31374 U.S. Highway 2  
Libby, Montana 59923-3022

Dear Mr. Bradford:

This is in response to your February 22, 2013 request for U.S. Fish and Wildlife Service (Service) review for federally listed threatened and endangered species regarding the effects of the proposed Pilgrim Creek Timber Sale Project. The proposed action is located approximately 10 air miles northwest of Trout Creek, Montana on the Cabinet Ranger District of the Kootenai National Forest (Forest). We received your request on February 26, 2013. We received additional information via email on March 26, 2013.

The proposed action would harvest approximately 1,434 acres using a combination of regeneration and intermediate harvest prescriptions. Logging would be accomplished using both ground-based and skyline yarding systems. Approximately 4.7 miles of new, permanent road would be constructed and closed with a permanent closure device (earth berm, rocks, reclamation) post-harvest. An additional 1.1 miles of temporary road would be constructed and then decommissioned upon completion of harvest activities. Prescribed burning would also occur on approximately 4,564 acres to improve forage for big game species. Refer to the biological assessment for specific information on acres treated or miles of road affected.

The Service has reviewed the biological assessment and additional information and concurs that the proposed action is not likely to adversely affect the threatened grizzly bear (*Ursus arctos horribilis*) in ways other than those analyzed in the 2011 biological opinion on Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones and grizzly bear reoccurring use areas outside of the recovery zones (BORZ) on the Kootenai, Idaho Panhandle, and Lolo National Forests (US Fish and Wildlife Service 2011; hereafter Access Amendment). The Service also concurs that the proposed action is not likely to adversely affect the threatened Canada lynx (*Lynx canadensis*). Therefore, pursuant to 50 CFR 402.13 (a), formal consultation on these species and critical habitat is not required.

On October 18, 2011, the Service issued the biological opinion on the effects of the Access Amendment. This biological opinion was prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The biological opinion has been identified as the first-tier of a tiered consultation framework, with the review of subsequent projects related to access management that may affect grizzly bears as being the second-tier of consultation. Second-tier biological opinions would be issued as appropriate, where proposed actions would result in adverse effects to grizzly bears that were not fully analyzed in the first-tier biological opinion.

The action area for the proposed project is outside of the Cabinet-Yaak ecosystem (CYE) grizzly bear recovery zone within the Clark Fork BORZ. The 2011 biological opinion on the Access Amendment (US Fish and Wildlife Service 2011) provides an incidental take statement concerning grizzly bears that may occur both inside and outside of the CYE recovery zone on the Forest. In doing so, the effects of core area and open and total motorized route density were analyzed for the CYE recovery zone and effects of linear road densities were analyzed for grizzly bears outside of the recovery zones (BORZ). The effects of access management on grizzly bears in the Cabinet Yaak Ecosystem, including the action area, were fully considered in the analysis in the 2011 biological opinion on Access Management. We agree with the Forest that the range-of-effects of the existing linear miles of open and total roads were analyzed in the 2011 biological opinion on the Access Amendment as part of the baseline condition for the Clark Fork BORZ.

Based on our review of the biological assessment, the Service concurs that the project-related effects of the proposed Pilgrim Creek Timber Sale Project on grizzly bears are not likely to adversely affect the threatened grizzly bear and would not impose additional adverse effects to what was previously analyzed in the 2011 biological opinion. The proposed project would be in compliance with the standards provided in the Access Amendment. This letter serves as a confirmation that the baseline access condition and the effects on grizzly bears were considered in the 2011 programmatic biological opinion and the project is in compliance with that biological opinion and incidental take statement. We affirm that the programmatic biological opinion provides ESA section 7 compliance; therefore no second-tier biological opinion is required for this project.

The proposed project is located within the Elk/Pilgrim lynx analysis unit (LAU). It is not located within lynx critical habitat. The timber sale would not occur within snowshoe hare habitat but would occur in areas that lack of dense horizontal cover. Such treatments are expected to move the stands to an early stand initiation stage and would result in a dense understory of seedlings and shrubs approximately 10 years post-harvest, thus providing snowshoe hare habitat. The proposed action is consistent with all applicable standards and guidelines of the Northern Rockies Lynx Amendment. We agree with the Forest's determination that the proposed action is not likely to adversely affect Canada lynx.



We appreciate your efforts to ensure the conservation of threatened and endangered species as part of your responsibilities under the Endangered Species Act, as amended. If you have questions or comments related to this issue, please contact me or Katrina Dixon at 406-449-5225, extension 222.

Sincerely,

*Anne Vandehey*

Anne Vandehey  
Acting Field Supervisor



# United States Department of the Interior

## Fish and Wildlife Service

Ecological Services

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File: M19 Kootenai National Forest (I)

April 30, 2013

Doug Grupenhoff  
Cabinet Ranger District  
Kootenai National Forest  
2693 Hwy 200  
Trout Creek, Montana 59874

Dear Mr. Grupenhoff:

On March 28, 2013, the U.S. Fish and Wildlife Service (Service) concurred with your effects determinations that project-related effects of the Pilgrim Creek Project were not likely to adversely affect grizzly bears (*Ursus arctos horribilis*) or Canada lynx (*Lynx canadensis*). We received a supplement to the Pilgrim Creek Project biological assessment via email on April 23, 2013. The supplement to the biological assessment provides an analysis of the potential impacts from prescribed burning activities included in the project, including helicopter use. This analysis was inadvertently omitted in the February 22, 2013 biological assessment.

The Service has reviewed the supplement to the biological assessment and concurs that the additional effects of the Pilgrim Creek Project that were not previously considered are not likely to adversely affect the threatened grizzly bear. The additional activity that was considered in the supplement consists of helicopter use associated with prescribed fire activities and fire used to reduce slash. While some disturbance to grizzly bears may occur as a result of these additional activities, such disturbance would be short-term and insignificant. The 4,564 acres proposed for burning would be spread out over a ten-year period. Helicopter activity would consist of a few trips per ignition unit, no more than two activities would occur per year, and activity would not last more than two days per ignition unit.

The Service also acknowledges that no additional effects to Canada lynx are expected. The areas proposed for prescribed burns consist of big game winter range and occur on dry sites that are not typically used by lynx.

We appreciate your efforts to ensure the conservation of threatened and endangered species as part of your responsibilities under the Endangered Species Act, as amended. If you have questions or comments related to this issue, please contact me or Katrina Dixon at 406-449-5225, extension 222.

Sincerely,

Brent Esmoil  
Acting Field Supervisor



## **Appendix M**

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### Forest Plan Amendment



File Code: 1920/1950

Date: March 29, 2013

Subject: Pilgrim Creek Project-Specific Amendment – MA 12 Facilities Standard #3

## **Introduction**

The Pilgrim Creek Record of Decision (ROD) would suspend the following Forest Plan standard in order to implement the Preferred Alternative:

### **Management Area (MA) 12 Facilities Standard #3**

“Roads open to public use will not exceed an average density of 0.75 miles per square mile within the contiguous MA”  
(Forest Plan, Vol. 1, III-51).

## **Background**

This project specific Forest Plan amendment is for the Pilgrim Creek project area only and does not apply to other areas. During the design of the Pilgrim Creek project, management practices necessary to meet the long-term goals for lands of the Kootenai National Forest were determined to be in conflict with current Forest Plan standards.

The Cabinet Ranger District proposes a project specific Forest Plan amendment to this standard to allow the open road density (ORD) to exceed the Forest Plan standard. The purpose of this document is to analyze the effects of the amendment so that the Forest Supervisor can determine whether it constitutes a significant amendment.

The Purpose and Need for this project is to: A) Reduce stand densities, improve growing conditions, and increase the proportion of root disease-resistant tree species in the area; B) increase age class diversity in lodgepole dominated forest communities in the project area; C) provide local employment related to forest management and restoration activities and to supply forest products to contribute to the support of that segment of the local and regional economy dependent on timber products; D) improve forage production and quality through the use of such treatments as commercial timber harvest, slashing, and prescribed fire.

## **Area Description**

The legal description is all or parts of T25N; T26N; R32W; R33W; R34W PMM, Sanders County, Montana. The Project Area is located west and southwest of Noxon, Montana, on the south side of Cabinet Gorge Reservoir. The Project Area encompasses approximately 36,602 acres. There are approximately 29,987 acres (82%) of National Forest System (NFS) land; 6,615 acres (18%) of private land in the Project Area.

## **Existing Condition**

As a result of decisions made during a previous project the Pilgrim Planning Subunit is divided into two open road density areas. The Stevens Ridge Amendment Area includes the area south of

Pilgrim Creek. This area already has a programmatic Forest Plan Amendment for MA-12 and is not included in this amendment. The decision area for this amendment is for the portion of the subunit north of Pilgrim Creek which includes the Smeads Creek drainage as well.

Existing conditions in some of the MA 12 portions of the Decision Area do not represent the desired conditions identified in the Pilgrim Creek DEIS. Existing conditions and trends are affecting forest health, diversity, and productivity, and are having social and economic consequences. A number of areas have experienced higher mortality rates, shift in species composition, and a buildup of ground and ladder fuels due to a number of factors.

Currently, there are 21.3 miles of road open yearlong in the Decision Area and just over 4.7 miles of seasonally restricted roads (DEIS page 3-72). Most open roads in the area are main arterial roads, loop roads, and roads that lead to private land access. These roads are important to the local population that depends on their availability for firewood cutting, recreational access, and access to their residences.

### **Proposed Activity**

The Preferred Alternative would implement management activities on about 5,998 acres (20% of NFS land in the Project Area). This includes timber harvest on 1,434 acres producing an estimated 36,000 CCF (18,000 MBF), and prescribed burning (underburning) without harvest on approximately 4,564 acres. An additional 4.7 miles of new permanent road and approximately 1.1 miles of temporary road would be needed for harvest access. Portions of an estimated 47 miles of existing roads would be maintained to meet Best Management Practices, to improve surface drainage, and provide for safe use.

Alternative 3 was designed to provide for human needs while insuring that the resulting effects represent the types, patterns, and distribution of natural disturbances. In doing so, the social and economic needs of our local and regional communities can be met, as well as providing for the ecological needs of a full range of plant and animal species.

The management activities included in Alternative 3, the Preferred Alternative for the Pilgrim Creek project, require the use of roads that are currently open year-round to motorized access as well as roads that are restricted year-round to public motorized access. Typically, roads restricted to motorized access that are used for management activities more than 14 days during the year are considered "open" roads, and are calculated into the ORD; restricted roads that are used for management activities less than 14 days per year, are not considered open, and are not taken into account when calculating ORD.

The Preferred Alternative would result in ORD increasing to 2.6 mi/mi<sup>2</sup> ORD as a result of project-related management activities outside of the Stevens Ridge Amendment Area. Post-project ORD would return to the current 1.9 mi/mi<sup>2</sup>.

### **Purpose of the Amendment**

In order to implement this action which responds to the purpose and need of the NEPA document, exceeding the ORD is necessary to concentrate management activities temporally and spatially to minimize the effects of displacement on big game. Additionally, given the length of some of the restricted roads in the Decision Area, opening the roads to access a proposed timber harvest unit would necessitate additional expenditures to install temporary gates or barriers to prevent access on the roads beyond the unit.



### **Alternative Considered for Meeting ORD**

Alternative 5 in the Pilgrim Creek DEIS did not increase open road density in the planning subunit. This alternative was considered in detail and analyzed by the Interdisciplinary Team.

### **Direct and Indirect Effects**

The Preferred Alternative contains the following Design Criteria to help reduce the effects of ORD:

- The Preferred Alternative includes treatment units accessed by roads that are restricted year-round to public motorized use. All restricted roads used for timber sale purposes would retain public motorized restrictions while timber harvest and associated activities were occurring (DEIS page 2-41).
- To provide security to big game, some decommissioning and intermittent stored service work would be part of the timber sale requirements (DEIS page 2-41).

Project area would return to pre-project open road density levels once project related activity is completed. (DEIS page 2-46).

The DEIS (pages 3-65-74) disclosed the anticipated effects of the increase in ORD on big game species. The analysis focuses on habitat effectiveness due to increased open road densities. Habitat effectiveness typically decreases as open road density increases. Implementation of Alternative 3 is expected to have some short-term effects on big game, mostly in the form of displacement. Long-term effects to population viabilities are not expected. Habitat effectiveness would return to pre-project levels after this project (DEIS pages 3-65-74).

### **Cumulative Effects**

This modification is for the Pilgrim Creek Planning Subunit only. It does not apply to other areas on the Kootenai National Forest, although other situations have arisen on the Forest where a similar modification has been needed. For example: Young Dodge SEIS (2012); Young J Fire Rehabilitation EA (2002); Gold/Boulder/Sullivan EIS (2001); Pink Stone Fire Recovery EIS (2001); White Pine Creek Project FEIS (2004); Pipestone FEIS (2004); Bristow Area Restoration Project EA (2004); McSutton EIS (2005); Alder and Cow EA's (Riverview Planning Subunit) (2005); and Brush Creek Fire Salvage (2008). These all include Forest Plan amendments for MA 12 Facilities Standard #3. The cumulative effects of amendments to the Kootenai Forest Plan were analyzed in the *Cumulative Effects of Past Projects on Wildlife, Kootenai National Forest* (Johnson 2006) and the findings were considered in evaluating the potential effects of this project-specific amendment.

Forest-wide, monitoring results show that overall, open road density has decreased (KNF Forest Plan Monitoring and Evaluation Report, Fiscal Year 2007). These reductions in open roads have improved security habitat conditions. The KNF Forest Plan Monitoring and Evaluation Report, Fiscal Year 2007 (page 14), goes on to say:

"Forest-wide (including MAs 15 and 16): Since there is limited historical (first 10 years) data available for just MA 12 or the biological summer range on habitat effectiveness, the information for all Forest lands (all MAs) is used to show the probable trend. The trend in habitat effectiveness shows an improving condition (shown in Table C-1-2). This same trend is likely on summer range (both MA 12 and biological).

**Table 1 Forest-wide Elk Habitat Effectiveness Trend**

Year	Open Miles	Closed Miles	Total Miles	% Closed	ORD* (mi/sq. mi)	Habitat Effectiveness %**
1987	4,530	1,670	6,200	27	1.3	56
1988	3,707	3,195	6,972	46	1.1	58
1992	3,364	3,785	7,149	53	1.0	60
1997	3,082	4,275	7,357	57	0.91	62
2002	2,934	4,982	7,954	63	0.86	63
2007	2,905	4,978	7,883	63	0.86	63

\* ORD = Open miles/3,373 square miles (Area of KNF capable of providing elk habitat- summer and winter)

\*\* Figure 2 pg. 13 in: USDA FS, MFWP, C S & K Tribes, PC Timber Inc. 1985. *Elk Habitat Timber Management Relations Central Zone Northern Region* (20 pp.).

In 1988, when Forest-wide habitat effectiveness (HE) was 58 percent, the elk population potential index was 5,000 elk. At the end of the 10 year monitoring period (1997) habitat effectiveness has reached 62 percent, with a resulting increase (31 percent) in the elk potential population index (6,555 elk). At the end of the third five-year reporting period, habitat effectiveness was up to 63 percent. At the end of 2007, HE remains at 63 percent. This maintains the elk potential population index at 6,660 elk. While HE has not increased over the past 5 years, there has been a 71-mile decrease with decommissioning. The Plan projected a population potential increase of 3,000 elk over a 30-year timeframe. The increases in the elk potential population index are occurring quicker than projected in the Forest Plan. One reason is the less than expected road construction on MA 16 and others. These lands have been able to provide higher summer range habitat values than projected in the Plan. See monitoring item C-2 for more information on the elk population."

#### **Effects to Threatened, Endangered, and Sensitive Species**

Alternative 3 may affect but is not likely to adversely affect the grizzly bear and Canada lynx. Alternative 3 may impact individuals, but would not contribute to a trend to federal listing or loss of population viability for the fisher, Townsend's big-eared bat, Coeur d'Alene salamander, gray wolf, or western toad. It would have no impact on the bald eagle. Concurrence on the Pilgrim Creek project was received from the USFWS on March 28, 2013. Supporting documentation for these analyses is found in the Wildlife Project File and Biological Assessment (Wildlife Project File) and Biological Evaluation (DSEIS pages III-179-234).

#### **Public Notification**

In accordance with 36 CFR 219.27(d)(2)(ii), the public was notified during project scoping that the Proposed Action contained a project-specific amendment to the Forest Plan to exceed the open road density in MA 12. The Notice of Intent was published in the Federal Register on March 23, 2012, and included notice of the proposed amendment. Information about the proposed amendment was also included in the Forest's quarterly Schedule of Proposed Actions published during 2009, 2010, and 2011.

#### **Evaluation of NFMA significance**

Based on the consideration of the four factors identified in the Forest Service Land Management Planning Manual, 1926.51, and considering the Forest Plan in its entirety, I have determined that the adoption of this project specific amendment to the Kootenai Forest Plan is not significant

based on the following. This amendment is fully consistent with, but further refines the means to achieve current Forest Plan goals and objectives.

**1. Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management.**

This project-specific amendment would be short-term in nature. The proposed change for open road density would not exceed the life of the Pilgrim Creek project. Timber harvest activities are expected to last approximately 3-6 years. Open road densities would continue to exceed the standard during the implementation of the project, which includes prescribed burning, reforestation, and road maintenance. Roads that are currently restricted to motor vehicle access would remain restricted to the public during and following harvest. No change from the existing condition would occur during implementation of the project because current road restrictions would remain in place (DEIS page 2-46).

This project-specific amendment is for MA 12 lands in portions of the Pilgrim Creek Decision Area only. This project approval would affect approximately 5,797 acres of MA 12 in the Decision Area, or about 0.004% of the 1.3 million acres of MA 12 on the Kootenai National Forest (USDA Forest Service, 1987c, III-61, 64, and 66). Analysis for short-term amendments on the Kootenai National Forest has been approved for exceeding open road density. Analysis for these amendments has concluded that there would be sufficient effective habitat for big game within the Decision Areas; therefore, forestwide, the goals and objectives of MA 12 would be met.

**2. Adjustments of management area boundaries or management prescriptions resulting from further on-site analysis when the adjustments do not cause significant changes in the multiple-use goals and objectives for long-term land and resource management.**

This MA 12 amendment does not adjust management area boundaries or management prescriptions. The goal of MA 12 is to maintain or enhance non-winter big game habitat and produce a programmed yield of timber. The goal would not change with this amendment. However, by increasing the ORD in the area, the degree to which big game habitat can be maintained or enhanced in portions of the Pilgrim Creek Decision Area would be diminished slightly.

**3. Minor changes in standards and guidelines**

This change allows for achievement of the dual MA goals to produce a programmed yield of timber while maintaining big game habitat. This is a minor reduction because it affects less than one percent of the total summer range on the Forest. Timber outputs would be unaffected since this modification would allow timber to be removed in a timely, cost-effective manner. Also, as noted in the FY 2007 Monitoring Report, page 14:

“The Plan specifies that 0.75 miles per square mile of road would be open to the public on MA12 lands, which correlates to a 68% habitat effectiveness level. In the last five years, five Forest Plan amendments resulted in increases in MA12 ORDs. Over the past twenty years, there have been 17 such amendments. The amendments affected 31% of the MA12 lands. The current habitat effectiveness level is 68%, which includes the MA12 amendments (USDA, Johnson 2006).”

While the Forest Plan ORD level in MA 12 is not met on the Forest as a whole (ORD = 0.86 mi/ mi<sup>2</sup>), it has improved since the FY 1997 Monitoring Report, where ORD in MA 12 was 0.91 mi/mi<sup>2</sup> and has remained the same since the FY02 Monitoring Report, where it was 0.86 mi/mi<sup>2</sup>. At the end of 2007, habitat effectiveness remains at 63%. While HE has not increased over the past 5 years, there has been a 71-mile road decrease with road decommissioning (FY2007 Monitoring Report, p. 14).

**4. Opportunities for addition projects or activities that will contribute to achievement of the Management Prescription.**

This MA 12 ORD amendment permits activities to take place that improve the cover/forage ratio for elk through increasing the amount of forage. This existing cover/forage ratio for the Pilgrim Creek area is 79/21 in summer range and 73/27 in winter range. The Preferred Alternative would improve the cover/forage ratio to 75/25 for summer range and 72/28 for winter range.

**Conclusion/Determination of Significance**

We have determined that this programmatic forest plan amendment is not a significant amendment to the Kootenai Forest Plan.

Recommended By:

Ellen Framment 4/8/13  
Ellen Framment  
Forest Planner

Date

Approved By:

Paul Bradford 4/8/2013  
PAUL BRADFORD  
Forest Supervisor

Date

**APPENDIX 1**  
**LIST OF PAST PROJECT-SPECIFIC AMENDMENTS TO**  
**MA 12 FACILITIES STANDARD #3**

Project Specific Amendments						
FY Year	District	Date Signed	Decision Name	Standard Amended	Description	Years in effect
1992	Three Rivers	06/09/92	Arbo Creek	Exceed water yield, MA 12 ORD, MA 12 cover/forage ratios, allow timber salvage in MA 2	Water yield created by existing situation	ORD increase for this life of the sales; MA 2 salvage for the life of the sale, cover forage ratios for 10-15 years
	Three Rivers	06/09/92	4th of July	Exceed water yield, MA 12 ORD, MA 12 cover/forage ratios, allow timber salvage in MA 2	Water yield created by existing situation	ORD increase for this life of the sales; MA 2 salvage for the life of the sale, cover forage ratios for 10-15 years
1993	Rexford	7/23/93	Compartment 10	MA 12, FS#3	Exceed ORD until 1994	2 years
	Rexford	04/25/93	Dodge Creek Heli	MA 12, FS #3	Exceed ORD until 1994	2 years
	Fortine	07/12/93	Meadow View	MA 12, FS #3	ORD of 1.0 during sale; .75 after	2 years
	Libby	12/14/93	Purcell	MA 12 FS #3; MA 14 FS#4 in comp 504; MA 15/16/17/18, WS #2 in comp 503	ORD increase during project activities.	2 years
	Libby	06/14/93	Thomas/Gulch Rainy Blue	MA 12, FS #3	ORD of 3.3 (max) during Dec-Aug; .6 after	2 years
	Canoe Gulch	07/02/93	Weigel Creek	MA 12, FS #3	ORD of 1.9; .6 after	2 years



Project Specific Amendments						
FY Year	District	Date Signed	Decision Name	Standard Amended	Description	Years in effect
1994	Libby	04/29/94	Tepee Salvage	MA 12, FS #3	ORD max 2.3 in Comp 33; 1.5 in Comp 43; ORD after sale .7 in Comp 33, 0 in Comp 43	2 years
	Cabinet	10/19/93	Gray Woodchuck	MA 12, FS #3	ORD 1.85 during sale; .75 after	3 years
1995	Rexford	07/27/95	Webb	MA 12, FS #3	ORD 1.12 during sale; .44 after	2 years
	Rexford	01/05/95	Compartment 2	MA 12, FS #3	ORD 1.3 during sale; .75 after	2 years
1995	Libby	04/26/95	Dry Fork Salvage	MA 12, FS #3	ORD 2.1 during sale; .75 after	1 year
	Libby	05/11/95	Road 4904K; Mushroom harvest	MA 12, FS #3	ORD 1.5 during picking	1 year
	Libby	06/27/95	Cripple Horse Salvage	MA 12, FS #3	ORD 2.1 during sale; .7 after	1 year
	Libby	06/27/95	Brush Creek Salvage	MA 12, FS #3	ORD 1.4 during sale; .75 after	1 year
	Libby	08/18/95	Peace Alexander Salvage	MA 12, FS #3	ORD up to 2.5 during sale; .75 after	1 year
1996	Libby	01/10/96	Little Wolf	MA 12, FS #3	ORD max 2.3 in Comp 33; 1.5 in Comp 43; ORD after sale .7 in Comp 33, 0 in Comp 43.	2 years
	Rexford	09/24/96	Huckleberry Salvage	MA 12, FS #3	Existing ORD .65, during sale 1.03, after sale .65	2 years
1997	Libby	10/21/96	Warland Salvage	MA 12, FS #3	Existing ORD 2.6, during sale 2.05, after sale .66	2 years
	Libby	10/23/96	Bristow Salvage	MA 12, FS #3	Existing ORD 1.27, during sale 1.27, after sale 0.74	2 years
	Rexford	11/18/96	Burro Face Salvage	MA 12, FS #3	Existing ORD 1.01, during sale 1.49, after sale 0.75	3 years
	Rexford	06/06/97	McSutton Salvage	MA 12, FS #3	Existing ORD .81, during sale 1.53, after sale 0.75	3 years
	Libby	06/19/97	Cripple Horse Timber Sale	MA 12, FS #3	Comp 609 Existing ORD 1.4, during sale 2.2, after sale 1.4 (this is allowed for under amendment #8) Comp 610 existing ORD .9, during sale 2.2, after sale 0.0	2 years
1998	Libby	1/23/98	Alexander Salvage Timber Sale	MA 12 FS #3	Comp 601, overlaps with amendments for Peace Alexander, Will allow ORD to go to 2.0, after sale .63	2 years
	Libby	6/9/98	Grubb Salvage Timber Sale	MA 12 FS#3	Comp 643, existing ORD 0.0, during project 1.53, after 0.0	1-2 years

Project Specific Amendments						
FY Year	District	Date Signed	Decision Name	Standard Amended	Description	Years in effect
1998	Libby	06/17/98	North Fork Jackson Salvage Timber Sale	MA 12, FS #3	Comp 602 Existing ORD .75 , during sale 1.5 , after sale .75	1 years
1999	Rexford	6/16/99	Pinkham Timber Sales	MA 12 FS#3	Comp. 18 and 21 Existing ORD is 1.51 and will increase to 1.81 during activity.	3-5 years
	Libby	6/23/99	Dry Pocks Timber Sale	MA 12 FS#3	Comp 579, existing ORD 0.0, during project 1.0, after 0.0.	3 years
2000	Libby	6/16/00	Syrup Salvage	MA 12, FS#3	Comp 578, existing ORD .34, During 2.1, after .34	3 years
2001	Libby	10/00	Alexander Timber Sale	MA 12, FS #3	Comp 551, existing ORD .33, During 2.0, after .33	3 years
2002	Rexford	10/5/01	Pink Stone Fire Recovery	MA12, FS #3	ORD to increase to 2.70 during activities	2-5 years
	Rexford	12/14/01	Gold/Boulder/Sullivan	MA 12, FS #3	ORD Increase to 1.52 during activities.	5-7 years
	Cabinet	6/17/02	White Pine	MA 12, FS #3	Temporary increase in ORD from 0.71 to 2.23	5 years
2003	Rexford	10/11/02	Young J	MA 12, FS #3	ORD Increase to 1.19 during activities.	2 years
2004	Libby	6/2/04	Pipestone	MA 12, FS #3	ORD increases in 3 compartments during activities. Post-project ORDs at or below existing levels for 5 compartments.	3-5 years
	Libby	6/16/04	South McSwede	MA 12, FS #3	Comp 539 existing and during project ORD of 3.88, post-project ORD of 2.44. Comp 540 existing and during project ORD of 1.20, post-project ORD of 1.20.	3-5 years
	Libby	6/16/04	Bristow	MA 12, FS #3	For sub planning unit, ORD increase from existing level of 1.0 to 1.5 during activity period. Post-project ORD of 0.78	3-5 years
2005	Rexford	5/14/05	McSutton	MA 12, FS #3	ORD increase to 1.00 during activities.	10 years
	Libby	6/15/05	Riverview (Alder, Cow)	MA 12, FS #3	ORD of 1.30 during activities, post project ORD of 0.96 compared to existing ORD of 2.00.	5 years
2008	Libby	4/28/08	Brush Creek Fire Salvage	MA12, FS #3	Existing ORD of 0.84 to increase during project activities to 1.28. Post-project ORD reduced to 0.69.	3 years
2009	Libby	06/08/09	Miller West Fisher	MA12, FS#3	Existing ORD of 1.30 to increase during project activities to 2.13. Post-project ORD to return to 1.30.	1-2 years

Project Specific Amendments						
FY Year	District	Date Signed	Decision Name	Standard Amended	Description	Years in effect
2012	Rexford	2-May-12	Young Dodge	MA 12, FS #3	ORD above 0.75 miles per square mile over the life of the project.	5 years

**KOOTENAI FOREST PLAN  
LAND AND RESOURCE MANAGEMENT PLAN**

**Pilgrim Creek Project-Specific Amendment**

Within the *Pilgrim Creek* Project Area, the Kootenai National Forest Plan, page III-49, in Management Area (MA) 12 is modified for the Facilities standard #3, to suspend the requirement that roads open to public use will not exceed an average density of 0.75 miles per square mile within the contiguous MA. This modification applies only to the Project Area that is located on the Cabinet Ranger District and shown on the attached map. This amendment would be in place only during the life of the project.

The current standard for Management Area 12, Facilities Standard #3 (Forest Plan, Vol. 1, p. III-51) is:

**“Roads open to public use will not exceed an average density of 0.75 miles per square mile within the contiguous MA.”**

The Forest Plan states "If it is determined during project design that the best way to meet the goals of the Forest Plan conflicts with a Forest Plan standard, the Forest Supervisor may approve an exception to that standard for that project."

This project-specific amendment allows achievement of the overall Forest Plan goal for this Management Area, which is to "maintain or enhance the habitat effectiveness for non-winter big game habitat, and produce a programmed yield of timber. The major species include black bear, grizzly bear, elk, moose, whitetail deer, and mule deer" (Forest Plan, Vol. 1, p. III-48). The amendment allows for a concentration of management activities both temporally and spatially to minimize the effects of displacement on big game.

Project-specific amendments must comply with the National Environmental Policy Act procedures. Compliance with these procedures and rationale for this project-specific amendment are contained in the *Pilgrim Creek* DEIS and associated project record.

Approval Date: 4/8/13

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## Appendix N

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Over 40 Ac. Opening Request/Approval





**File Code:** 2470

**Date:** April 8<sup>th</sup>, 2013

**Subject:** Pilgrim-Request to Exceed 40-acre Harvest Opening Limitation.

**To:** Forest Supervisor

The National Forest Management Act (NFMA) of 1976 [16 USC 1604 (g) (3) (F) (IV)], establishes opening size limits according to geographic areas, forest types, or other suitable classifications. Regulations establish the size limit for our geographic area at 40 acres, with exceptions for larger openings when they will produce a more desirable combination of net public benefits.

Creating openings greater than 40 acres requires Regional Forester approval and 60 day public notice and review unless it meets one of the two exceptions listed below (FSM 2400, Chapter 2470, R1 Supplement 2400-2001-2).

#### **Exceptions to Regional Forester approval and 60 day public notice and review**

1. Where ***natural catastrophic events*** such as fire, windstorms, or insect and disease attacks have occurred, 40 acres may be exceeded without 60-day public review and Regional Forester approval, provided the public is notified and the environmental analysis supports the decision.
2. Where any one of the following conditions exists, the size of an opening may reach up to ***60 acres*** without 60-day public review and Regional Forester approval, provided the public is notified and the environmental analysis supports the decision:
  - a. When larger created openings ***will reduce the disturbance*** to soil, water, fish, or riparian resources, and residual vegetation by allowing economically feasible logging systems that reduce landing and road construction; or locating roads away from unstable soils; and reducing soil and vegetation disturbance from dragging logs.
  - b. Where groups of dwarf mistletoe or root rot disease infected trees need to be incorporated into the created opening to ***avoid infection of susceptible conifer*** reproduction and their inclusion cannot be achieved by centering the created opening over the area of infection.
  - c. Where ***visual quality objectives*** require shaping and blending of openings to fit landform.
  - d. Where larger units are needed to ***achieve silvicultural objectives*** in existing areas of regeneration cutting by the shelterwood method, and where destruction of the newly created stand of reproduction would occur as a result of delayed removal of shelterwood units and shelterwood units under contract prior to approval of the Forest Plan.

Openings that meet these exceptions will require Forest Supervisor approval. The Forest Supervisor will be briefed prior to scoping or during alternative development on any proposed over 40 acre openings and the rationale for the treatment.

The Cabinet Ranger District has prepared a Draft Environmental Impact Statement (DEIS) for the Pilgrim Timber Sale Project. Alternative three, the preferred alternative, would create three openings exceeding 40 acres due to the catastrophic mountain pine beetle infestation. (DEIS, 2-19). More information on the project, including the DEIS, is available at: <http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=31645>. I am requesting approval to exceed the 40-acre opening size limitation on opening 2,3 and 4 (as summarized in the attached table), for reasons outlined here as listed in FSM 2471.1, and supported by the Pilgrim Timber Sale Project DEIS. The proposed openings meet the catastrophic event exception due mountain pine beetle infestation in lodgepole pine dominated stands. Opening two is 201 acres, opening three is 321 acres and opening four is 40 acres.

### **Summarized desire to treat units larger than 40 acres**

Pilgrim Creek Timber Sale project is located west and southwest of Noxon, Sanders County, Montana (T25N; R32W; T29N; R33W; R34W; PMM), and encompasses an area approximately 36,602 acres, of which approximately 29,987 acres are National Forest System lands (DEIS, 1-8).

The Pilgrim Creek Timber Sale Project landscape was completely consumed by the stand replacing fires of 1889 and 1910. Several decades of effective fire suppression and timber harvest has changed forest development across this landscape to dense stands comprised mainly of Douglas-fir, grand fir, and lodgepole pine. The condition of these stands deviates from historic conditions found prior to the 1880's when unmanaged wildfires occurred within the ecosystem (DEIS, 1-2). All of the over-40-acre openings will meet the Forest Plan visual quality objectives. The treatments are also consistent with R1 Supplement 2400-2001-2 for areas with timber emphasis that "silvicultural practices will ensure stands achieve and maintain the level of stocking, species composition and structure best suited to meet short- and long-term management objectives including those addressing volume growth and yield" (FSM 2470.3, Item 1).

The DEIS established four purpose and need statements (DEIS, 1-4 - 1-5):

1. Develop silvicultural treatments to reduce stand densities, improve growing conditions, and increase the proportion of root disease-tolerant tree species in the area.
2. Increase age class diversity in lodgepole pine dominated forest communities in the analysis area.
3. Provide local employment related to forest management and restoration activities and to supply forest products to contribute to the support of that segment of the local and regional economy dependent on timber products.
4. Improve forage production and quality through use of treatments such as commercial timber harvest, slashing, and prescribed fire.

The preferred alternative, Alternative 3, was developed to address the increased lodgepole pine mortality caused by mountain pine beetle and address the moderate to high levels of root disease found throughout the analysis area. One thousand four hundred thirty four acres of harvest including 898 acres of even-aged regeneration treatments are proposed under this alternative. Of the four purpose and needs statements, the second, regarding age class diversity in lodgepole pine dominated forest communities, is specifically addressed in this request.

Current vegetative patterns in the project result from the stand replacing fires of 1889 and 1910, insects and disease outbreaks, past harvesting practices, exclusion of wildfire, and natural succession leading to in-growth of fire-vulnerable tree species in the shaded understory. Mountain pine beetle generally attacks mature to over mature stands of lodgepole pine and other pine species. Outbreaks usually develop where average tree diameters are greater than 8", average stand age is 80 years or more, and in stands with extreme stocking. Mountain pine beetle continues to increase in lodgepole stands of the analysis area. A site visit by a regional pathologist confirmed that "a significant amount of MPB-caused tree mortality will probably occur over the next 2 years, barring any unusual weather circumstances". This is expected as populations are at extremely high levels in surrounding Forests including the Idaho Panhandle, Flathead, Lolo, Helena, etc. It is expected that infestation in the project area will increase for a few years, until the majority of the susceptible hosts are infected. MPB has reduced the stocking in some stands to unacceptable levels. The majority of the high-risk stands, those with higher percentages of mature to over-mature pine, have already sustained appreciable mortality. (DEIS, 3-27).

Current forest conditions, mountain pine beetle infestation, and their relationship to disturbance processes and forest health issues are discussed at length in the DEIS (pages 3-13 to 3-29). Regeneration harvesting effects on forest health, forest structure, and forest succession are also discussed (DEIS, 3-30 to 3-43).

The DEIS discusses the need for large opening to “Increase age class diversity in lodgepole pine dominated forest communities in the analysis area” stating:

- The mountain pine beetle infestation is considered epidemic within the stands of lodgepole pine at the head of West Fork Pilgrim Creek, Skeleton Creek, and the South Fork Pilgrim Creek (DEIS, 3-40).
- MPB has reduced the stocking in some stands to unacceptable levels, therefore limiting the opportunities to commercially thin. Greater than 40 acre openings are planned in areas with the highest concentration of MPB mortality to reduce stand densities, improve forest health, and increase age class diversity (DEIS, 3-40).
- The openings would occur in dense forest stands dominated by lodgepole pine that is infested with a mountain pine beetle (DEIS, 3-45).
- Expansion of treatment beyond 40 acres is important to be effective in the larger stands dominated by lodgepole pine....., specifically to meet the purpose and need statements to reduce stand densities, improve growing conditions, increase the resiliency to root disease, and create age class diversity in the lodgepole pine dominated forest communities (DEIS, 3-46)
- Because of the extent of past harvesting, the proposed treatments will not likely alter the current “managed” appearance of the hillside but will trend the landscape in the direction of meeting Forest Plan VQO’s (Visual Quality Objectives).....will serve to partially blend some previous regeneration units into the landscape to some degree (DEIS, 3-276).

Openings two, three, and four will result from regeneration harvest in stands impacted by mountain pine beetle (Table 1). These openings are within the Kootenai Forest Plan Management Area 12 (MA 12) where goals are to maintain or enhance non-winter big-game habitat while providing a program yield of timber. Major wildlife species include grizzly and black bear, elk, moose, whitetail and mule deer. Lands within this MA are suitable for timber production; off road vehicle use is regulated; and moderate retention in areas of moderate visual significance.

#### **Cool and Moderately Dry Habitat Settings VRU9-Fire Regime IV**

VRU 9 sites are generally found on rolling ridges and upper reaches of mountain slopes generally above 4,400 feet in elevation (i.e. Lone Cliff). This VRU occurs on all aspects in the lower subalpine zone on gentle to moderately steep slopes. Lethal and moderately severe fires often create pure even-aged stands of lodgepole pine, as the 1910 fire demonstrated. Patch size resulting from stand-replacement events were typically 5,000 to 100,000 acres (USDA, 1999). The fire return interval for these large non-uniform fires ranged from 100 to 115 years. The mixed severity, non-uniform fires ranged between 50 and 300 acres, on an fire return interval of 50-71 years.

(DEIS 3-41) Larger regeneration patch sizes are more characteristic of the historic range of variability.

#### **Scenic**

(DEIS 3-273) Unit boundaries and roads were redesigned from alternative 2 to create more irregular naturally appearing edges, provide for more wildlife movement corridors, and reduce impacts from harvest and roads to the scenic resource. Harvest prescriptions will create a more open canopy from current conditions and some openings will be visible but the irregular edges and variable spacing of the leave trees will make them appear natural in the landscape.

VQO's and the scenic integrity levels would be met through openings exceeding forty acres. Opening size is not directly related to scenic value, but depends how the opening blends with its surroundings or mimics natural processes such as wildfire. Proposed openings would encompass previously harvested units, softening the edges and increasing the scenic integrity.

Openings two and three, at 201 and 321 acres, are located at the head of Skeleton Creek. Along with the existing road system, an additional new specified road and a temporary road are planned to access the openings. The proposed openings are highly visible for several miles along the West Fork Pilgrim Road.

Opening four, at 50 acres, lies at the head of Stevens Creek and has a moderate visual significance (see Map below). No new road construction either specified or temporary is required for access.

### **Wildlife**

(DEIS 3-110) The creation of large openings (greater than 40 acres) more closely resembles those created by natural processes. However, elk do not fully utilize large openings for feeding (MT Coop Elk Study 1985, Leege 1984, Thomas 1979), especially in northwestern Montana where large openings are scarce. They feed along the edges of the unit (generally within 600 feet) and do not venture into the middle of the opening. The result is that elk do not have access to all of the forage available in the area until shrubs and trees in the opening begin to provide some cover.

(DEIS 3-61) Regeneration harvest would result in a long-term (50-100 years) site-specific reduction in suitable cavity habitat for species (e.g. pileated woodpeckers) that do not utilize open areas for nesting. In the long-term, the green trees retained in regeneration units would provide nesting habitat as the new forest develops into a mature stand. Large openings (over 40 acres in size) would not necessarily reduce available snag habitat more than smaller openings. It may be easier to retain snags in the interior of large units due to distance from roads, though wind effects may offset this retention over time.

Regeneration harvest in Alternatives 2, 3, 4, and 5 would reduce snag availability specific to the unit areas, and use would change from those species requiring snags with nearby live tree cover (e.g. pileated woodpeckers) to those which will use snags in open sites (e.g. bluebirds, northern flicker, flycatchers). Larger openings (i.e. over 40 acres in size) would be as suitable to some species such as bluebirds and flickers, while others would tend to avoid them (such as goshawks, boreal owls, and brown creepers).

### **Fuels**

(DEIS 3-157) The need to create openings over 40 acres in size stemmed from insect and disease activity, not to meet fuels treatment objectives. Units were not designed or positioned to alter landscape level fire effects. Analyzing the data at the stand level indicates the probability of a surface fire transitioning to the crowns and the probability of sustained crown fire would decrease in treated stands post treatment. These treatments would be effective for 15 to 40 years. The primary difference between alternatives, from fuels prospective, is the amount of the project area being treated

### **Silvicultural diagnosis and prescription**

All units were field reviewed by the project silviculturist, project wildlife biologist, sale prep forester, logging systems specialist, and district fuels specialist during the identification of the proposed action. The project silviculturist completed a silvicultural diagnosis table for all of the proposed units. Before implementation, a certified silviculturist will prepare detailed silvicultural diagnoses and prescriptions for the units selected for treatment. All proposed harvest openings will be scheduled for reforestation. Adequate stocking to meet the prescription is expected within 5 years after harvest as required by NFMA Section 6 (g) (3) (E) (ii) and Forest Service Handbook 2409.17, Supplement No.: R1 2409.17-2002-1, Sections 2.3 and 2.7.

**Adjacent stands, acreages, and recovery status**

All of the openings that exceed 40 acres share at least a portion of their border with previously regenerated stands on national forest lands. All of the adjacent stands were harvested 10 or more years ago and well stocked with saplings. Adjacent stands are certified restocked and no longer considered openings with regards to vegetation management. However, they do not meet the requirements for elk hiding cover s defined in the DEIS (3-65) and are still considered openings with regards to wildlife management. Recovery of these stands is expected to be relatively rapid and most should provide hiding cover within five years.

**Public Notice**

Public scoping began on February 24, 2010 with an additional opportunity to provide input related to regeneration harvest in May of 2011. Comments and key resource issues lead to the development of an alternative with no openings exceeding 40 acres and no road construction. Five alternatives are disclosed in the DEIS, providing a range of effects related to opening sizes for the public and the decision maker to assess. The DEIS discloses the details on the specific units that alone or in combination exceeded 40 acre opening sizes, as well as the reasons for doing so (DEIS, 2-19 and 3-39). ). The official 60 day comment period on the DEIS started February 8, 2013. Only general comments on the DEIS relating to these larger opening sizes were received, so the deciding officer deemed no additional alternative development or analysis related to openings greater than 40 acres would be necessary for the FEIS.

As of this point in time, the DEIS, with its detailed list and description of units and openings greater than 40 acres, has been available for public review for the required 60-day public notice required by FSM 2470, Region One Supplement 2400-2001-2, February 1, 2002. The Final EIS is scheduled to be published in April of 2013, likely at the same time as the Record of Decision.

**List of each proposed cutting unit or group of units that create an opening over 40 acres, see attachment.**  
**Map of proposed cutting units and their relationship to adjacent past regenerated stands, see attachment.**

Thank you for considering this request.

*/s/ John Gubel*  
John Gubel  
District Ranger



**Table 1: Proposed Harvest Unit, Grouped by Opening Number, that Create Openings Over Forty Acres**

Opening #	UNIT#	Stand numbers	Acres of New Hvst Opening	Cutting method	Est. Recovery Period	Opening size specific reasons and discussion		
						Related to Forest Health <sup>1</sup>	Related to Fuels reduction	Other Comments
1	4, 5, 6	713.02-003, 016, 017, 029, 040, 042, 062,	76	Shelterwood w/ Reserves	15 - 30 years	High silv priority. DF dominated stand with GF, RC, WH, and WL. DF root disease moderate to high. Plant WL/WP/RC.	Concern with fire hazard and fuel loadings associated with stand conditions and past/ongoing mortality.	
2	8, 10T, 10S, 10B	717.05-009, 011, 023, 717.06-003, 018, 023, 024,	201	Shelterwood w/ Reserves (Species Designate to Remove all LP)	15 – 30 years	High silv priority. LP dominated stand – high mortality to MPB; ongoing risk high. Natural regen WL/LP. Plant some WP for species diversity in lower elevations	Not in WUI, but high fuel loadings and fire potential due to disease, stand structure.	New specified road and temp road are needed for access (see map)
3	12S, 12B, 12, 18	717.06-010, 016, 020, 021, 718.04- 003, 007, 008, 011, 012, 013, 020, 021, 023, 027, 028	321	Shelterwood w/ Reserves (Species Designate to Remove all LP)	15 - 30 years	High silv priority. LP dominated stand – high past mortality to MPB; ongoing risk high. Natural regen WL/LP. DF/GF in lower elevations. Unit 18 is dominated by DF with moderate levels of root disease.	Not in WUI, but high fuel loadings and fire potential due to disease, stand structure, and species composition.	New specified road and temp road are needed for access (see map)
4	31, 32	719.06-007, 022	50	Shelterwood w/ Reserves (Species Designate to Remove all LP)	15 - 30 years	High silv priority. LP dominated stand – high past mortality to MPB; ongoing risk high. Natural regen WL/LP.	Not in WUI, but high fuel loadings and fire potential due to disease, stand structure, and species composition.	
5	39B, 39A, 37, 40C, 40B	719.01-003, 007, 005, 012, 013, 014, 015, 027, 028, 029, 719.02- 004, 013, 015,	187	Shelterwood w/ Reserves	15 - 20 years	High silv priority. DF dominated stand with some GF, WL. DF root disease is low to moderate. Plant WL/WP/PP. Unit 39B has high concentrations on dead and dying LP.	Concern with fire hazard and fuel loadings associated with stand conditions and past/ongoing mortality.	A landscape level visual quality analysis was used to help shape the opening consistent with visual quality objectives. This is an elk security area. New specified road and temp road are needed for access (see map).
6	39, 40	722.06- 009, 020, 030, 031, 032, 034, 037, 044, 045,	87	Seedtree w/ Reserves	15 - 20 years	High silv priority. DF dominated stand with some GF, WL. DF root disease is low to moderate. Plant WL/PP.	Concern with fire hazard and fuel loadings associated with stand conditions and past/ongoing mortality.	A landscape level visual quality analysis was used to help shape the opening consistent with visual quality objectives. This is an elk security area. New specified road and temp road are needed for access (see map).

<sup>1</sup> Abbreviations: DF = Douglas-fir; WL = western larch; LP = lodgepole pine; GF = grand fir; RC = western redcedar; WH = western hemlock; MPB = mountain pine beetle; WUI = wildland urban interface





United States  
Department of  
Agriculture

Forest  
Service

Kootenai National Forest  
406 293-6211

Forest Supervisor's Office  
31374 US Highway 2  
Libby, MT 59923-3022

**File** 2470  
**Code:**

**Date:** April 29, 2013

**Subject:** Authorization to Exceed 40 Acre Opening Size due to Natural Catastrophic Events on the Pilgrim Timber Sale

**To:** District Ranger, Cabinet Ranger District

Your request to create three openings exceeding 40 acres due to the catastrophic mountain pine beetle infestation on the Pilgrim Timber Sale is approved, based on the analysis completed for the Pilgrim Timber Sale project environmental analysis. The approved design includes:

Opening 2

Units 8, 10B, 10S, & 10T 201 acre opening

Opening 3

Units 12, 12B, 12S & 18 321 acre opening (includes 39 acres of existing opening)

Opening 4

Units 31 & 32 50 acre opening (includes 10 acres of existing opening)

The actions and subsequent management strategy proposed for these units fall under the requirement to limit opening size, as described by Section 6 of the National Forest Management Act. This act requires that cuts designed to regenerate an even-aged stand of timber be subject to established maximum size limits (16 USC 1604 (g) (3) (F) (iv)).

Regulations establish the size limit for our geographic area at 40 acres, with exceptions for larger openings when they will produce a more desirable combination of net public benefits.

The three openings meet the exception to create openings greater than 40 acres due to the catastrophic mountain pine beetle infestation in this area.

You have complied with FSM 2471.1 for this request to exceed specified limits and are hereby approved to implement these treatments following the signature of the associated decision document for the Pilgrim Timber Sale Project.

/s/ Paul Bradford  
PAUL BRADFORD  
Forest Supervisor



cc: Deena Shatzberger  
Barry Bollenbacher



**File Code:** 2470  
**Route To:**

**Date:** April 9, 2013

**Subject:** Pilgrim-Request to Exceed 40-acre Harvest Opening Limitation

**To:** Regional Forester

The National Forest Management Act (NFMA) of 1976 [16 USC 1604 (g) (3) (F) (IV)], establishes opening size limits according to geographic areas, forest types, or other suitable classifications. Regulations establish the size limit for our geographic area at 40 acres, with exceptions for larger openings when they will produce a more desirable combination of net public benefits.

The Region One Supplement to the Forest Service Manual (FSM), effective February 22, 2002, requires the following information in support of this request to exceed the management standards and guidelines for opening sizes in the Regional Guide (FSM 2400, R1 Supplement 2400-2001-2, pages 2-4).

The Cabinet Ranger District has prepared a Draft Environmental Impact Statement (DEIS) for the Pilgrim Timber Sale Project. Alternative three, the preferred alternative, would create six openings exceeding 40 acres; often exceeding the 60 acre limitations (DEIS, 2-19). More information on the project, including the DEIS, is available at: <http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=31645>. I am requesting approval to exceed the 40-acre opening size limitation in openings 1, 5 and 6 as displayed on the attached table, for reasons outlined here as listed in FSM 2471.1, and supported by the Pilgrim Timber Sale Project DEIS. Opening one is 76 acres, opening five is 187 acres and opening six is 87 acres.

**Summarized desire to treat units larger than 40 acres**

Pilgrim Creek Timber Sale project is located west and southwest of Noxon, Sanders County, Montana (T25N; R32W; T29N; R33W; R34W; PMM), and encompasses an area approximately 36,602 acres, of which approximately 29,987 acres are National Forest System lands (DEIS, 1-8).

The Pilgrim Creek Timber Sale Project landscape was completely consumed by the stand replacing fires of 1889 and 1910. Several decades of effective fire suppression and timber harvest has changed forest development across this landscape with dense stands comprised mainly of Douglas-fir, grand fir, and lodgepole pine. The condition of these stands deviates from historic conditions found prior to the 1880's when unmanaged wildfires occurred within the ecosystem (DEIS, 1-2). All of the over-40-acre openings will meet the Forest Plan visual quality objectives. The treatments are also consistent with R1 Supplement 2400-2001-2 for areas with timber emphasis that "silvicultural practices will ensure stands achieve and maintain the level of stocking, species composition and structure best suited to meet short- and long-term management objectives including those addressing volume growth and yield" (FSM 2470.3, Item 1).

- The National Forest Management Act (NFMA) of 1976 [16 USC 1604 (g) (3) (F) (IV)], establishes opening size limits according to geographic areas, forest types, or other suitable classifications. Regulations establish the size limit for our geographic area at 40 acres, with exceptions for larger openings when they will produce a more desirable combination of net public benefits.
- The Region One Supplement to the Forest Service Manual (FSM), effective February 22, 2002, requires the following information in support of this request to exceed the management standards and guidelines for opening sizes in the Regional Guide (FSM 2400, R1 Supplement 2400-2001-2, pages 2-4).
- The Cabinet Ranger District has prepared a Draft Environmental Impact Statement (DEIS) for the Pilgrim Timber Sale Project. Alternative three, the preferred alternative, would create six openings exceeding 40





acres; often exceeding the 60 acre limitations (DEIS, 2-19). More information on the project, including the DEIS, is available at: <http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=31645> . I am requesting approval to exceed the 40-acre opening size limitation in openings 1, 5 and 6 as displayed on the attached table, for reasons outlined here as listed in FSM 2471.1, and supported by the Pilgrim Timber Sale Project DEIS. Opening one is 76 acres, opening five is 187 acres and opening six is 87 acres.

**Summarized desire to treat units larger than 40 acres**

- Pilgrim Creek Timber Sale project is located west and southwest of Noxon, Sanders County, Montana (T25N; R32W; T29N; R33W; R34W; PMM), and encompasses an area approximately 36,602 acres, of which approximately 29,987 acres are National Forest System lands (DEIS, 1-8).
- The Pilgrim Creek Timber Sale Project landscape was completely consumed by the stand replacing fires of 1889 and 1910. Several decades of effective fire suppression and timber harvest has changed forest development across this landscape with dense stands comprised mainly of Douglas-fir, grand fir, and lodgepole pine. The condition of these stands deviates from historic conditions found prior to the 1880's when unmanaged wildfires occurred within the ecosystem (DEIS, 1-2). All of the over-40-acre openings will meet the Forest Plan visual quality objectives. The treatments are also consistent with R1 Supplement 2400-2001-2 for areas with timber emphasis that "silvicultural practices will ensure stands achieve and maintain the level of stocking, species composition and structure best suited to meet short- and long-term management objectives including those addressing volume growth and yield" (FSM 2470.3, Item 1).
- The openings would occur in...stands dominated by Douglas-fir with a moderate to high level of root diseases (DEIS, 3-45).
- Expansion of treatment beyond 40 acres is important to be effective in the larger stands dominated by ... Douglas-fir, specifically to meet the purpose and need statements to reduce stand densities, improve growing conditions, increase the resiliency to root disease, and create age class diversity in the lodgepole pine dominated forest communities (DEIS, 3-46)
- The vast acres of Douglas-fir dominated stands infected with root disease are one factor in considering openings greater than 40 acres. A second factor is harvest on Tuscor Hill where "partial retention in areas of high visual significance" is a standard for the management areas found on Tuscor Hill along the Clark Fork River (DEIS, 3-39).
- Because of the extent of past harvesting, the proposed treatments will not likely alter the current "managed" appearance of the hillside but will trend the landscape in the direction of meeting Forest Plan VQO's (Visual Quality Objectives).....will serve to partially blend some previous regeneration units into the landscape to some degree (DEIS, 3-276). Patch sizes were quite variable across these VRUs and ranged from 20 to over 300 acres and historically being created and affected by a range of fire intensities from low to stand replacing, with mixed-severity fire being most common.

Openings one, five, and six will result from regeneration harvest in stands impacted with root disease (Table 1). These openings are within the Kootenai Forest Plan Management Area 12 (MA 12) where goals are to maintain or enhance non-winter big-game habitat while providing a program yield of timber. Major wildlife species include grizzly and black bear, elk, moose, whitetail and mule deer (USDA, 1987). Lands within this MA are suitable for timber production; off road vehicle use is regulated; partial retention in highly significant areas is promoted as is moderate retention in areas of moderate visual significance.

(DEIS 3-41) Larger regeneration patch sizes are more characteristic of the historic range of variability.

(DEIS 20) VRU 3 - Stand structure is a product of mixed severity fires and occasional stand replacement events; this VRU is generally made up of a mosaic of stand ages and forest types. Historic patch sizes were variable within 20 to 200 acre patches created by mixed and lethal fires. Structure is variable with gaps to large even-aged single storied patches. Single stories stands are prevalent due to most multi-aged multi-storied stands being burned in 1898 & 1910. Reference basal area densities are 80 to 120 sq. ft. /ac., increasing in more productive sites such as riparian areas.

VRU 4 - A natural disturbance regime of primarily mixed severity fires with infrequent lethal fires, in addition to root disease, created a mosaic of horizontal and vertical forest structure across this landscape. There is a wide range of fire free intervals within this VRU due to the wide moisture gradient and the influence of surrounding stands. Historic patch sizes ranged from 100 to 300 acres or more.

VRU 5 - In general, fires in VRU5N can be characterized as non-uniform with infrequent but often extensive stand replacing fires on an average frequency 200 years, i.e. the fire of 1910. Historic patch sizes for stand replacing events ranged from 100 to 300 acres or larger. The potential for larger patch sizes was dependent on fuel, topography, insect and disease conditions and weather. Fire history studies in the Clark Fork River Corridor (Barrett, 1991) indicate an average patch size of 437 acres, ranging from 5-2000 acres (USFS, 1999) pg 80.

### **Scenic Integrity**

VQO's and the scenic integrity levels would be met through openings exceeding forty acres. Opening size is not directly related to scenic value, but depends how the opening blends with its surroundings or mimics natural processes such as wildfire. Proposed openings would encompass previously harvested units, softening the edges and increasing the scenic integrity.

Opening one, at 76 acres, lies within the Smeads Creek drainage and has a low visual significance and is not visible from any main roads or trails. No new road construction either specified or temporary is required for access. Smead's Creek drainage is visible from existing open roads.

Openings five and six, at 187 and 87 acres, are located on Tuscor Hill which has a high visual significance. Along with the existing road, an additional new specified road to be gated and several short temporary roads are planned to access the openings. Tuscor Hill is highly visible for several miles along Highway 200, Noxon Reservoir, and the Clark Fork River. When the Pilgrim Creek Timber Project was initiated, photorealistic images of the landscape were developed using photos taken from the vista point along the Clark Fork River that lies east of Tuscor Hill.

(DEIS, 3-274) Implementation of Alternative 3 would create two openings over 40 acres in size in the Tuscor Face area. Unit 39 is 20 acres, unit 40 is 35 acres and they are adjacent to a 32 acre existing opening from past harvest, which would total 87 acres. The second opening is a combination of unit 37 (34ac) 39A (36ac), 39B (33ac), 40B (29ac), 40C (19 ac), and a 36 acre existing opening from past harvest for a total of 187 acres.

The first greater than 40 opening is in MA 11 and 12, and is mostly rated as partial retention for scenic integrity objectives. This area is best seen from Swamp Creek viewpoint #2. Prescriptions for the two units are shelterwood in unit 39 and seed tree in unit 40. Unit 40 was reduced in size based on concerns for visual impacts. The two proposed units are separated by an existing road on a bench that helps to reduce its visibility from established viewpoints. The shelterwood harvest prescription in unit 39 will leave some residual clumps and individual trees that will help to blend the unit boundaries into the surrounding forest and existing opening, as well as buffer the existing road. Seed tree harvest in unit 40 will appear more open, but feathering and irregular boundaries will blend the unit into the surrounding forest. This type of harvest will also help to blend skyline skid trails. The effects of treating these units will shift the scenic objectives towards a modified landscape, in the short term, but over time, the area will recover and trend towards a partial retention goal.

The second greater than 40 opening is associated with Units 37, 39A, 39B, 40B, and 40C in MA11 and MA12, and rated as partial retention for scenic integrity objectives. The majority of the area is easily seen from both viewpoints. Prescriptions vary between seed tree and shelterwood harvest and will use similar design criteria as above to break up edges and blend the existing opening from previous harvests into the landscape. Short term impacts could reduce the scenic objectives to modified due to harvest related activities and the existing road along the Tuscor Face. Over the long term, vegetation would recover, evidence of skid trails and temporary roads would diminish, and the harvest units would blend into the landscape.



**Modeled representation approximating the preferred alternative as seen from the Highway 200 scenic turnout**

### **Wildlife**

Tuscor Face is part of the Stevens Ridge Amendment Area (DEIS, 3-67) and provides important elk security. Treating large areas, considering other resource constraints, will minimize the number of entries needed in the future to fully manage the area. New specified roads (which will all be closed yearlong after use) will be left alone for longer periods of time, potentially brush in, and afford greater security to wildlife. Temporary roads will be rehabilitated after use and closed in a manner that discourages off road motorized use, as described in the Design Criteria (DEIS, 2-22). Effects of treatments and road use on elk security are disclosed in the DEIS, 3-72.

Alternatives 3 includes units that will result in openings greater than 40 acres. Many of these openings are made larger by their location adjacent to existing harvest units that have been precommercial thinned recently. Alternative 3 includes seven openings of 40 acres or greater. This could result in openings that may not be fully utilized by elk as foraging areas, until regeneration on these sites reaches a point that it provides some cover. Where possible, stringers and groups of trees would be left within the units to provide screening and minimize the effect of the openings.

Movement corridors would be maintained to adjacent security areas and drainages.

Large openings (over 40 acres in size) would not necessarily reduce available snag habitat more than smaller openings. It may be easier to retain snags in the interior of large units due to distance from roads, though wind effects may offset this retention over time (DEIS 3-61).

Larger openings (i.e. over 40 acres in size) would be as suitable to some species such as bluebirds and flickers, while others would tend to avoid them (such as goshawks, boreal owls, and brown creepers) (DEIS 3-62). Similarly, for black-backed woodpeckers: Openings created by regeneration harvest would not provide any high quality habitat and would tend to be underutilized by black-backs, but there would not be any substantive difference in effects of larger (over 40 acre) openings versus smaller openings (DEIS 3-92).

## **Fuels**

### **Effects of Openings Over 40 Acres in Size**

The need to create openings over 40 acres in size stemmed from insect and disease activity, not to meet fuels treatment objectives. Units were not designed or positioned to alter landscape level fire effects. Analyzing the data at the stand level indicates the probability of a surface fire transitioning to the crowns and the probability of sustained crown fire would decrease in treated stands post treatment. These treatments would be effective for 15 to 40 years. The primary difference between alternatives, from a fuels perspective, is the amount of the project area being treated (DEIS 3-157).

The measurement indicator utilized to determine an acceptable volume of canopy fuel to prevent a crown fire is crown bulk density (CBD). A CBD above  $.08 \text{ kg/m}^3$  has the probability to sustain a crown fire. While it is not necessary to create stand with an “open” condition (CBD significantly below  $.08 \text{ kg/m}^3$ ) to reduce crown fire potential the additional acreage of treatment in alternatives 2, 3 and 4 due to larger unit size results in more fuels reduction on the landscape. These treatments would be effective for approximately 40 years.

### **Canopy Characteristics:**

In the majority of the project area, a crown fire could be supported due to the combination of current surface, ladder, and crown fuels. The predicted flame lengths coupled with the canopy base heights of < 10 feet would equate to a high probability of torching the canopy (20- 80%) and the potential overstory mortality being nearly 100% in most areas (DEIS 3-143).

Fire behavior modeling displayed outputs very similar for all action alternatives. When the output graphs are overlaid there isn't a significant difference in the potential effects on fire behavior between the action alternatives 2, 3, and 4 over time.

### **Direct and Indirect Effects**

The direct effects to fire and fuel resources associated with implementation of the action alternatives include:

- Reduction in surface fuels (Reducing the flame lengths)
- Reduction in ladder fuels (Increasing the canopy base heights)
- Reduction of crown bulk density (Reducing crown fire spread from tree to tree)
- Higher Crowning Index (Increase in wind speed needed to sustain an active crown fire)

Proposed treatments would remove the majority of the ladder fuels, thus raising the canopy base heights to greater than 35 feet. This height would inhibit surface flame lengths from readily moving into the tree crowns. The key in treating the crown fuels by removing overstory trees is to effectively reduce the canopy bulk density to a level where active crown fire is not possible or the chances are significantly reduced (Scott and Reinhardt 2001). The direct effects of these treatments would accomplish fire behavior objectives. Removal of the overstory trees would increase the space between tree crowns, reducing the likelihood of crown fire spread from one tree to the next. These fuel reduction methods will result in a probability of torching near zero and a probability of sustained crown runs near zero with extreme wind speeds. Silvicultural prescriptions will focus on retention of the largest trees in the stand, which are generally the most fire-resistant (Agee and Skinner 2005). (DEIS 3-147)

### **Direct Effects on Fire Behavior**

The following section summarizes the expected fire behavior based on the current condition of the fuels modeled under extreme weather conditions. A fire risk analysis was conducted for each treatment unit using these conditions (DEIS 3-149).

Alternative 3				
Unit(s)	Fuel Model	Existing Crown Fire Potential?	Fuel Model	Post Treatment Crown Fire Potential?
10T, 10S, 10B, 12, 12S, 18, 19, 20, 21A, 21B, 23, 23B, 24, 25, 29, 30, 31, 32, 34, 34A, 39, 39A, 39B, 40, 40C, 604, 605, 610, 614, 617	8	Yes	8	No
4, 5, 6, 8, 16, 35, 36, 37, 40B	10	Yes	11	No

#### **Silvicultural diagnosis and prescription**

All units were field reviewed by the project silviculturist, project wildlife biologist, sale prep forester, logging systems specialist, and district fuels specialist during the identification of the proposed action. The project silviculturist completed a silvicultural diagnosis table for all of the proposed units. Before implementation, a certified silviculturist will prepare detailed silvicultural diagnoses and prescriptions for the units selected for treatment. All proposed harvest openings will be scheduled for reforestation. Adequate stocking to meet the prescription is expected within 5 years after harvest as required by NFMA Section 6 (g) (3) (E) (ii) and Forest Service Handbook 2409.17, Supplement No.: R1 2409.17-2002-1, Sections 2.3 and 2.7.

#### **Adjacent stands, acreages, and recovery status**

All of the openings that exceed 40 acres share at least a portion of their border with previously regenerated stands on national forest lands. All of the adjacent stands were harvested 10 or more years ago and well stocked with saplings. Adjacent stands are certified restocked and no longer considered openings with regards to vegetation management. However, they do not meet the requirements for elk hiding cover as defined in the DEIS (3-65) and are still considered openings with regards to wildlife management. Recovery of recently thinned stands will help to break up continuity of some large openings, and even though most do not provide hiding cover they are well stocked and growing well. By the time these units are harvested they will likely have several additional years of growth.

#### **Public Notice**

Public scoping began on February 24, 2010 with an additional opportunity to provide input related to openings greater than 40 acres in size in May of 2011. Comments and key resource issues led to the development of an alternative with no openings exceeding 40 acres and no road construction. Five alternatives are disclosed in the DEIS, providing a range of effects related to opening sizes for the public and the decision maker to assess. The DEIS discloses the details on the specific units that alone or in combination exceeded 40 acre opening sizes, as well as the reasons for doing so (DEIS, 2-19 and 3-39). ). The official 60 day comment period on the DEIS started February 8, 2013. Only general comments on the DEIS relating to concerns about these larger opening sizes were received, so the deciding officer deemed no additional alternative development or analysis related to openings greater than 40 acres would be necessary for the FEIS.

As of this point in time, the DEIS, with its detailed list and description of units and openings greater than 40 acres, has been available for public review for the required 60-day public notice required by FSM 2470, Region One Supplement 2400-2001-2, February 1, 2002. The Final EIS is scheduled to be published in April of 2013, likely at the same time as the Record of Decision.



**List of each proposed cutting unit or group of units that create an opening over 40 acres, see attachment.**

**Map of proposed cutting units and their relationship to adjacent past regenerated stands, see attachment.**

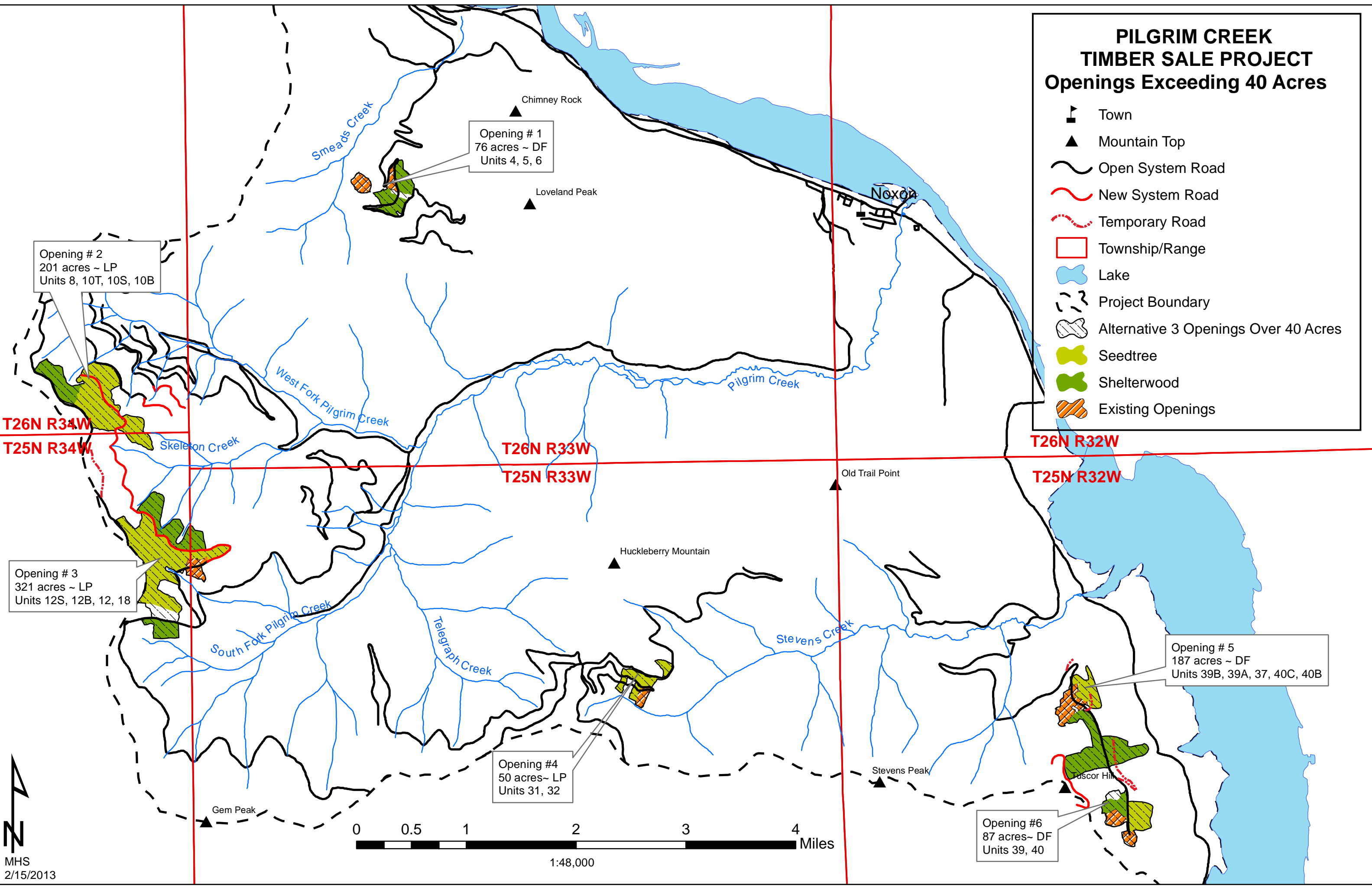
Thank you for considering this request.

*/s/ Paul Bradford*  
PAUL BRADFORD  
FOREST SUPERVISOR

cc: Barry Bollenbacher  
John Gubel  
Deena Shotzberger

# PILGRIM CREEK TIMBER SALE PROJECT Openings Exceeding 40 Acres

- Town
- Mountain Top
- Open System Road
- New System Road
- Temporary Road
- Township/Range
- Lake
- Project Boundary
- Alternative 3 Openings Over 40 Acres
- Seedtree
- Shelterwood
- Existing Openings





United States  
Department of  
Agriculture

Forest  
Service

Region One

200 East Broadway  
P.O. Box 7669  
Missoula, MT 59807

File Code: 2470

Date: April 19, 2013

Route To:

Subject: Authorization to Exceed 40 Acre Opening Size on the Pilgrim Timber Sale  
(corrected copy)

To: Forest Supervisor Kootenai National Forest

Your request to create an opening larger than 40 acres on the Pilgrim Timber Sale is approved, based on the analysis completed for the Pilgrim Timber Sale project environmental analysis. The approved design includes:

Opening 1

Units 4, 5, 6: 52 acres of new harvest opening in addition to 24 acres of previous harvest opening

Opening 5

Units 37, 39a, 39b,

40b, 40c: 151 acres of new harvest opening in addition to 36 acres of previous harvest opening

Opening 6

Units 39 and 40 55 acres of new harvest opening in addition to 32 acres of previous harvest opening

The actions and subsequent management strategy proposed for this unit falls under the requirement to limit opening size, as described by Section 6 of the National Forest Management Act. This act requires that cuts designed to regenerate an even-aged stand of timber be subject to established maximum size limits (16 USC 1604 (g) (3) (F) (iv).

You have complied with FSM 2471.1 for this request to exceed specified limits and are hereby approved to implement these treatments following the signature of the associated decision document for the Pilgrim Timber Sale Project.

This letter supersedes my letter, dated 15 April 2013, with the same subject title.

/s/ Eugene J Degayner  
EUGENE J. DEGAYNER  
Director of Renewable Resource Management

cc: Deena Shotzberger

